

AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

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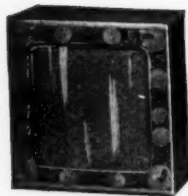
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American Bee Journal

Vol. LXXVIII—No. 10

Hamilton, Illinois, October, 1938

Monthly, \$1.00 a year

A New Sweet Clover

ONE of the most promising plants in our test plots this season is a new sweet clover sent to us by T. M. Stevenson, of the Experiment Station at Saskatoon, Saskatchewan. It is an annual with fine stems about like those of alfalfa. Planted in April it was in full bloom in August and attracted the interest of all visitors.

The farm crops men who came have all been enthusiastic. They say it overcomes the common objection to sweet clover because it lacks the coarse stems. In flower and leaf it resembles the common sweet clover and is apparently as attractive to the bees as any other strain.

From Stevenson we learn that the plant will probably be named and released for distribution very soon. Those who are interested in securing seed should apply to him although we understand that there is very little available at present. It takes time to accumulate a supply of seed of any new plant.

Judging from the behavior of this new sweet clover in our test plot we regard it as an outstanding addition to the bee pasture of this country. It seems to have all the advantages of Hubam without the coarse stems which so many farmers object to with that plant.

We would like to see the widest possible distribution of this new addition to our honey plants to give it a test under all kinds of conditions. If it lives up to present promise it will provide bee pasture at a season when little is available in many places.

—ABJ—

When Nectar Flows

FOR some time we have been accepting the statement that hot days and cool nights are most favorable for a honeyflow. In general this may be true but it is by no means so well established that it may be universally applied.

Our hive on scales during June was showing a daily gain of from three to five pounds with an occasional higher recording. Toward the end of the month the cool nights suddenly gave way to one of scorching heat followed by a day with even higher temperature when the thermometer registered 104.

Greatly to our surprise, the colony on scales recorded a yield of fifteen pounds for the day—three times that of the day before which was a warm day following a cool night.

The fact of the matter is that very little is known regarding the factors which influence nectar secretion. We may formulate a set of rules which seem to apply to a particular flow in one

The widely known Indiana 4-H Club at Newport is still going strong. These boys and girls are really doing things with bees and some of the ranks of the older beekeepers who leave the industry, will be effectively filled with youngsters like these. They know what they are doing and their leaders know that they are giving them what they need for good sound beekeeping practice.

The 4-H Club scale colony at the home of Mr. Stewart, the club parent, at Newport, showed a fine fall flow during early September just before the Indiana Roundup. We have the figures.—On September 4, the scale colony gained 18 pounds; September 5, 21 pounds; September 6, 6 pounds; September 7, 11 pounds; September 8, 11 pounds. The total gain during this period 67 pounds and a card home of Mr. Stewart, the club parent, week was 70 pounds.

We have just received from the Agricultural Adjustment Administration, copies of Agreement No. 79 and Order Series No. 29, which gives the details of the new Marketing Agreement, regulating the handling of package bees and queens produced in the United States. Breeders should become thoroughly acquainted with the provisions of the new regulations which are apparently about the same as those enforced in the season of 1937. Copies of the regulations may be obtained by writing to the Office of Publications, United States Department of Agriculture, Washington, D. C. Ask for Agricultural Adjustment Administration Order Series No. 29 and Marketing Agreement No. 79.

Here is a little item from one of my Belgian correspondents that is interesting. He says, "I believe that honey cures and prevents the 'fièvre aphteuse' which I take to be the foot and mouth disease. There are ten thousand new cases a year in Belgium. It is a real epidemic coming from Morocco. France, Belgium, Germany and Holland are all infected with it."

E. L. Sechrist,
Tahiti.

I wish to express my approval of your editorial in July in which you speak for a chance for discussion in beekeepers' meetings by the rank and file of beekeepers instead of the time being taken up by the specialist. Lectures and papers have a place in the larger conventions, but in the small meetings and demonstrations, the time should be for and by the beekeepers.

The place of the specialist is to supply information which may be needed and to develop leadership. "Help others to help themselves" has long been the main objective of agricultural extension work. I am not sure how many specialists are sticking to this principle. In New York, we found out a long time ago that the lecture meeting is not the best. Our meetings are on the discussion group plan and this plan is largely responsible for the fact that large numbers of beekeepers continue to attend the meetings of three or four times a year and have done so for twenty years.

George H. Rea,
New York.



We tried the two queen hives this year with queens above and below. They certainly put out the work, but it is a little inconvenient and involves extra labor. The top body always has to be juggled even for a simple manipulation. So, we prefer the two queens on separate bottom boards instead of on a single stand.

Alfred P. Johnson,
Illinois.



I have been annoyed by tall grass around my hives and in this state tall grass means ants finding their way into the hives. One spring day I solved the problem by taking discarded pieces of tar roofing paper and laying them under my hives row by row. No more tall grass touches them.

I placed each hive on a wooden base like the old fashioned bob sled which keeps the hives off the ground and makes moving about easy. In each corner of the hive where it contacts the base I drove a spike. It serves as a leg. The spike was driven through a piece of felt the size of a nickel. The felt is greased. It is a perfect preventative. For three years I have had no trouble with any kind of insects.

Each year, from twelve colonies, I have had fourteen hundred pounds of honey. However, I wish someone would tell us how to better marketing conditions. In these days, honey should mean money, but too often it just means barter for commodities.

W. E. Randall,
Florida.

locality, only to find them all wrong when some other plant blooms or there is a change of weather. Perhaps we may yet learn that each plant has its own peculiar requirements and that these may differ under different environmental conditions.

—ABJ—

Crop Control

THOMAS JEFFERSON is often quoted as having said: "When Congress shall decide when men shall reap and when they shall sow, the people will lack for bread."

Recent efforts to control production from Washington have not met with the measure of success hoped for. There are too many uncertain factors for any artificial crop control to succeed. Floods, drought, hail, frost, insects and plant diseases are all to be reckoned with.

There are indications that America will repeat the disastrous experiences of other countries in crop control. There have been examples to suggest caution. The disaster that overtook Brazil with coffee, Great Britain with rubber and the Argentine with cattle suggest the outcome of our own doubtful experiments.

The beekeeper can hardly be blamed to resent paying a tax to provide cash benefits to the producer of corn, cotton or tobacco when the market for his own product is falling. It is hard to justify taxing one group to pay cash benefits to another group whose problem is no more serious.

The soil conservation program favors the increase of legumes and the more abundant bee pasture indicates larger crops of honey. To pay a cash benefit to the beekeeper would probably serve only to make his problem more acute in the long run by stimulating further production, but he cannot be blamed if he is not enthusiastic about contributing to the benefits of other groups.

—ABJ—

Drought

DROUGHT is becoming an increasingly serious problem in all sections of our country. There are few localities which do not suffer at times because of dry weather. This is due in part to bad farming practice which favors a run-off of the rainfall instead of soil storage.

In fence rows or forest areas which are not cultivated or pastured water will penetrate the soil very rapidly and little will run away. In fields which are continually cultivated the humus content of the soil is low and much of the rainfall runs off because the texture of the soil is such that water penetrates very slowly. It requires hours on such soils for water to penetrate as far as it would in minutes on soils in a state of nature.

The situation is made worse by the widespread practice of straightening streams and draining of ponds, sloughs and bogs and thus removing all storage of water reserves. Unless there is some change which will make provision for storage of water reserve and the checking of the run-off by means of contour farming and soil terraces the drought situation will become increasingly severe.

This situation favors the cultivation of drought resistant crops including sweet clover. No other legume in common use will stand as much dry weather as sweet clover and because of that

fact the acreage is constantly increasing. There is a measure of consolation for the beekeeper in this fact.

—ABJ—

What About Honey Prices?

SINCE the publication of our suggested honey prices, in connection with the Crop and Market page, we have had a large number of comments. Strangely enough, these comments have been curiously conflicting.

One packer wrote, as his criticism, that we were trying to bolster the market beyond all prospects and were, in this way, deluding the beekeeper. One beekeeper justly complained that the recommendations were perhaps correct, but that the retail prices were too low for his section of the state. The latter is legitimate criticism but one which could with difficulty be corrected in a tabular report, although perhaps in the future some distinction can be made between the commercial areas and the ordinary beekeeping areas of a state.

However, most comments were that the honey prices were about correct. A few beekeepers suggested that they were, perhaps, "a little steep."

At this same time a letter has come from a large producer, who says: "The farmer producer sets his wholesale price when he sells part of his crop at retail at his neighborhood store." This comment is very well taken. If the farmer beekeeper with his 2000 pounds of honey sells his comb honey at the store, so that it will retail at two sections for twenty-five cents, he has made it almost imperative that the wholesaler of comb honey quote a ruinous price to his source of supply in order to compete with him.

The wholesalers may (and perhaps most of them do) ignore the ruinous prices and anticipate a time a little later in the season when these job lots will be off the market.

There is no doubt whatever but that ruinous retail prices which some beekeepers are responsible for have been just as powerful an influence on low markets as has the effect of large lots of honey shipped in from other sections.

Bear in mind our Crop and Market editor does not anticipate being able to gauge the market correctly and can only offer suggestions in line with what his reporters' and his own opinion combined indicate.

Occasionally we have seasons when the honey market starts high and has to be reduced. At such times, surpluses of competing products (such as fruits and syrups), shortage of demand for honey, and other economic factors may have telling effect on the honey market. 1937 was such a season. On the other hand, we have seasons when the production of honey is extremely heavy and the market starts off very low. Then a scarcity of competing products and a relatively heavier demand for honey may bring about an increased price.

1938 looks like such a year.

California in 1937 reported a 20,000,000 pound crop of honey. This was double what it was in 1936 and likely double what it will be in 1938. Likely, also, the central western production will be sufficiently high to offset the California crop, but the excess will not be so large as some imagine.

In the *Journal of Economic Entomology*, July 13, 1938, Dr. V. G. Milum of the University of Illinois makes the announcement of finding a parasite of the honeybee. While making examination of the contents of crowding bees in the apiary of the University, he found a threadlike larva in one bee's abdomen, the contents of which had been consumed by the parasite. The parasitized bee showed no external evidence other than a swollen abdomen and apparent partial paralysis like a bee suffering from spray poisoning or nosema disease. The examination of numerous other crawling bees showed no further parasites.

Dr. Steiner, of the Bureau of Plant Industry, U. S. D. A., determined the parasite as *Mermis subnigrescens* Cobb. He says, "It is a common species attacking grasshoppers in large numbers, one of the main controlling agents east of the Rocky Mountains. The finding of it in the honeybee is the first observation in this country. A closely related species, *Mermis nigrescens*, has been reported as a rare parasite of the honeybee in Europe."

The findings of this case indicates that it may be expected to be found from New England westward to Minnesota, Iowa and Missouri where it is known as a parasite of other insects. In the case of grasshoppers, infection results from feeding on plants on the surface of which eggs of the parasite are laid. On being swallowed by the grasshopper the eggs promptly hatch, the larvae entering the body cavity for feeding and growth.

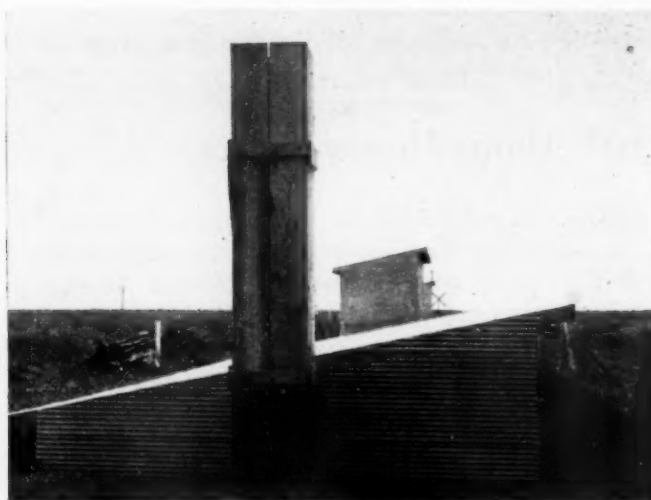
A possible method of infection of a honeybee is suggested by the fact that the female parasites lay their eggs especially during rainy weather and honeybees, after a period of confinement, often gather new supplies of water from leaves, blades of grass and other objects. It might not be impossible for a honeybee to take nectar that might be contaminated with the eggs of the parasite.

Our first frost this morning. The net crop is another failure. The fourth in a row, you might say. Fully one-third of the colonies are too light to winter, a third have enough and the last third have a little surplus, not enough for the first third.

J. Howard Wagner, Nebraska.

More honey will be sold for 5 cents per pound than higher this year. Ten pound pails are being offered for 75 and 80 cents, five pound pails for 35 and 40 cents, and comb honey for 8 and 10 cents. What is the matter with beekeepers?

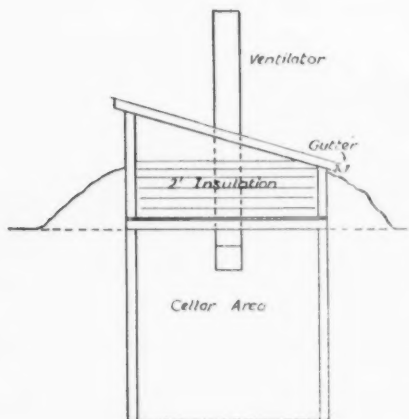
Alfred P. Johnson, Illinois.



Front and rear views, showing entrance, roof and ventilator.

An Inexpensive Cellar for the North

By Roy A. Grout,
Illinois.



Crosswise projection including ventilator at end.

HERE is the type of cellar used for wintering in North Dakota which has been worked out by men like Gordon Bell, E. H. A. Fischer, C. S. Engle, W. O. Victor and others. E. H. A. Fischer & Son use four of these cellars located near their home apiary and extracting plant. It is inexpensive and practical. Gordon Bell took four hundred colonies out of bee cellars of this type one spring, with a loss of only five or six colonies.

Each cellar is large enough to contain about ninety colonies in two story standard equipment. The colonies are placed in two rows the length of the cellar and piled two colonies high, which leaves an open runway in the center so one may walk through the cellar at any time. According to Mr. Fischer, ninety colonies is about the right number to winter in one cellar, larger numbers being difficult to winter successfully due to the heat of the

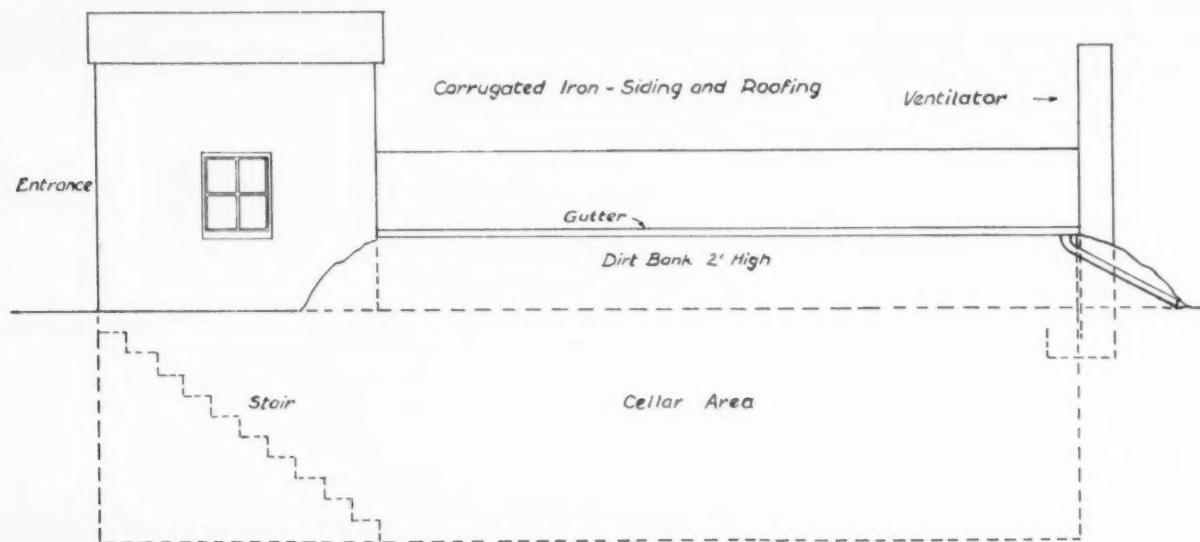


Diagram of construction, measurements as you wish. Note gutter and drain pipe.

colonies and the difficulty of maintaining a suitable cellar temperature.

Ventilation is obtained by leaving the entrance door ajar and by means of the ventilator at the rear. You will note that the rear ventilator is boxed at the bottom, so light does not enter directly down the ventilator shaft.

These cellars are approximately 7 feet wide and 35 to 40 feet long, and consist of an entrance stairway and the cellar area. Placed on high ground to prevent dampness, they are dug deep enough to permit head room. The structure is framed with 2x4 dimension lumber and the siding and roof finished with corrugated galvanized sheet iron.

An eaves trough and a down spout carry the rain water away from the ground around the cellar. The ceiling

is of 2x4 cross pieces covered with one inch flooring, which is, covered in turn, with building paper and successive layers of flax straw, with dirt on top until about two feet of insulation are obtained over the entire ceiling.

Around the outside, dirt is piled about two feet high against the corrugated siding. The roof over the cellar is approximately four feet above the ground level on one side and two feet on the other.

Through the cold North Dakota winter with its blizzards and cold late spring, the bees are well protected in these thoroughly insulated cellars. They are readily constructed with a minimum of expense, will last a long time and have been tried and proved by good beekeepers in our northern states.

two laths nailed to the cover and cleat at the bottom. This holds the lap of paper on one side as well as the cover.

I think I shall change to Caucasians in the near future. Despite the very poor season, Wayne sold 56 nice sections of honey, while some of my Italians stored only a few pounds in extracting combs.

Sister Ella May doesn't care to take care of bees. She is a big help at extracting and wrapping sections. Our honey is put up in neat packages with attractive labels. Until this season, a square quart jar with white caps led my sales, but now the five and ten pound pails are running an even race. I sell more honey than I can produce.

I say, give the boys a chance; encourage them. They are our future beekeepers.

R. C. Hickman,
Iowa.

Getting Ready for Winter



Ready to work.



Applying the pulp board.

THESE three pictures are of a colony of pure Caucasian bees being packed for winter. The bees are owned by my eight year old son, Wayne. He saved his pennies for more than a year to buy bees in a cage. Last spring he received his package from Texas. They arrived during a cold, rainy spell, but he kept them in a cool place and would inspect them every day on his return from school until the weather warmed up enough to put them in their hive.

When the pictures were taken, the wind was blowing, so sister Ella May was called to help us demonstrate

our new plan of packing. It takes the boy and myself usually about five minutes to pack a hive.

The packing consists of five pieces of 1 inch pulp board, two pieces 20x22 inches, three pieces 16 1/4 x 20 inches, two wood cleats 1 1/2 x 22 inches, one cleat 1 1/2 x 16 1/4 inches, two laths 24 inches long, one lath 16 1/4 inches long, and 1 piece sisal craft tar paper 24 inches wide and seven feet long.

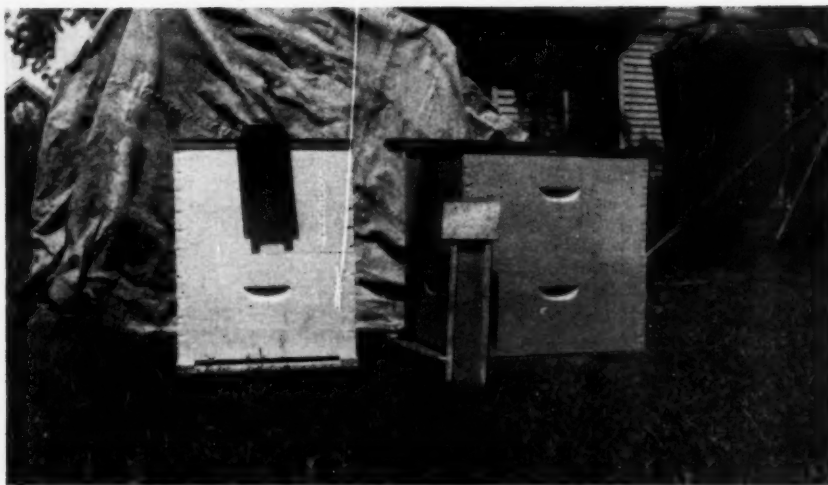
The paper is notched in front to fit the entrance and extends down over the cleats around the hive. The top of the paper is folded in, the cover pressed down in place and the



All done until spring.

Our Cover Picture

The cover this time is from a photograph submitted by H. A. Insinger, St. Charles, Missouri. His little five-year old girl, Dorothy couldn't stay away when told. Mr. Insinger says, "We were extracting honey and she persisted in hanging on the fence, clamoring to be let in to the honey house where we had no use for her. Well, the short of the story is that before long one of those trouble seekers got her on the eye. It isn't her first experience nor is she afraid. In fact, this picture was taken of her leaning against a beehive."



1. (Left) Tunnel entrance to extend from open inner-cover hole to front and through packing.

2. (Below) Half packed.

The Top Entrance for Wintering

By Robert M. Ray

Minnesota.

IN order to understand the top entrance better, I think it would be helpful to study the reasons for moving the entrance from the bottom to the top for winter use.

We beekeepers who live in the part of the country that really has a severe winter feel that the logical place for winter entrance is at the top of the hive. In most cases I refer to a double brood chamber, as that is the most common method of wintering out of doors. I have observed that as the bees draw up in a cluster they usually leave the bottom board and the cluster forms up in the frames. Then as the winter progresses, and the honey is consumed, the movement is toward the top bar. Because the top super of the double brood chamber is warmer the bees will even leave honey in the bottom half and establish their brood nest in the top. The brood rearing in the spring is practically always started in the top half. With the top entrance, I would say that the movement of the cluster is toward the entrance rather than away from it; as would be the case if the bottom entrance were used. I have found that when a tunnel entrance is used, as described a little later, the bees will actually cluster right in the mouth of the tunnel and



throughout the winter will stay right in the entrance much in the same manner as they do in the summer.

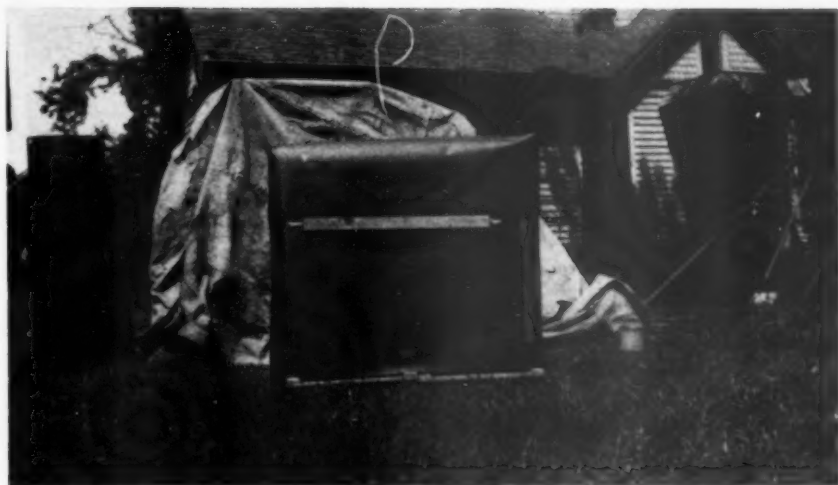
The tendency of the cluster to be near the entrance is of big value in the spring when the weather is warm enough for robbing. The weaker colonies may better protect their entrances. On a cool morning, before a small cluster has started to move around, robber bees seem to sneak in a bottom entrance and start to work on the outside frames. When the top entrance is used the robbers have to pass the cluster in order to gain admittance. In this way, the weaker colonies at least make an effort to protect their entrance.

The biggest advantage of the top entrance is that it will always stay open and never plug up; either from dead bees, snow or ice, or even water. If in rare cases, a sleet storm or a severe snow storm should plug a few entrances that were facing the storm just right, the heat escaping from the top entrance plus the heat of the sun on the tar paper soon makes some sort of an opening.

I have seen bees buried under twenty feet of snow and when we dug down in the drift, we found not

only open entrances, but large caves in the snow melted by the heat of the colony. In some cases the bees might have become warm enough to cluster on the outside of the package. When this drift, which was on level ground, melted, the water built up in the snow and in the hives so that it left a water mark two and three inches up on the frames. While these colonies showed the effects of a hard winter, we lost but few. With any other kind of an entrance I am sure that the loss would have been much heavier.

When we speak of moisture in the spring we must remember that there is a great deal of moisture from condensation on the inside of the hive all during the winter. In order to get good wintering we must give some thought to keeping the colony dry. When the top entrance is used, the condensation is noticeably reduced. During the cold weather, frost can always be found adhering to the tar paper directly above the entrance. With any other type of entrance this moisture would be deposited on the inside of the hive. It collects on the bottom of the inner cover to drip down on the frames



3. (Left) Two colonies with paper and lath in place and entrances cut.

4. (Below) Center entrance with shingles and front tunnel.

and bees. Of course there is the loss of heat that escapes with the moisture out of the hive, but it is more than offset by the dryness of the hive.

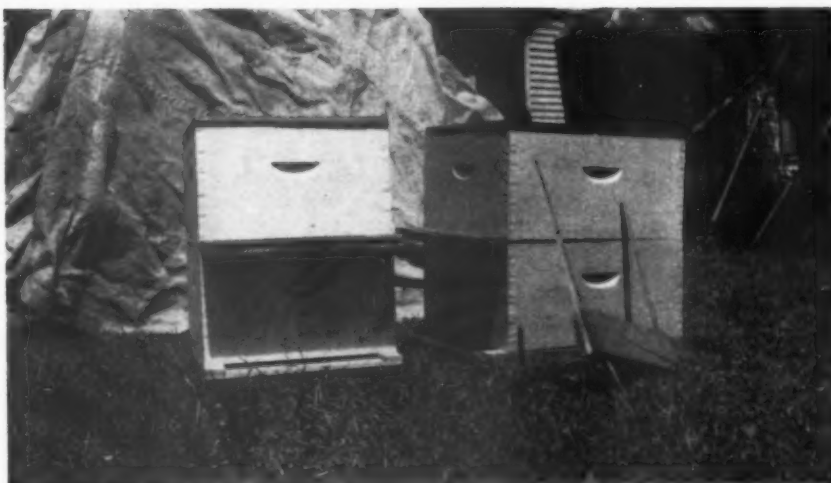
A top entrance in general is easy to install and confuses the bees very little. If one feels that bees will be lost by the change, they can be installed before the actual packing to allow the bees to use both entrances. I do not feel that this is necessary.

There are many types of top entrances. The three that I will describe are ones that we have used and found successful.

If you use packing around the outside of the hive bodies, a tunnel entrance will have to be made to reach from the hive to the outside of the packing. A tunnel that reaches to the escape hole in the inner cover seems to give a nice indirect entrance. The inner cover must be turned over so that the flat side is up. Then a three or four inch board long enough to reach from the outside edge of the packing to the hole in the inner cover, with cleats nailed along the sides and inner end will make a large enough tunnel. Figure No. 1.

Another piece of wood will have to be added to the bottom of the tunnel at the point where it leaves the inner cover and goes through the packing. This closes the bottom of the tunnel through the packing and also serves as a stop to keep the entrance in place. I have found that if the packing is added at the back at the same time as the front everything will be held in place without the additional work of nailing anything.

If packing is not used around the front sides of the hive a much simpler entrance can be installed. Use an ordinary shingle, and split it into strips about $\frac{1}{4}$ of an inch wide. Insert a piece of shingle along each side of the hive body underneath the inner cover with the butt or thick end to the front. This will give an



opening at the front and the tapered ends of the shingle close the opening at the side. This must be done before the paper is put on. After the paper is put on, a lath is nailed on the outside over the opening. It

should reach to within three or four inches of the outside edge of the hive; the top half of the lath to be nailed to the inner cover, and the bottom half to the hive body. This (Please turn to page 455)



5. An unpacked group of eight colonies, two facing in each direction.



Two views of queen yards in which Mr. Bessonnet operates.

We Need a Comprehensive Plan Of Stock Selection

By E. C. Bessonnet,

Louisiana.

SOME effort should be made to adopt a comprehensive program of selection of breeding queens. At a meeting in Donaldsonville several years ago, Dr. Mackensen of the Southern States Bee Culture Laboratory, described a procedure for selecting queens which has been considered from every angle and which seems to be logical to follow.

We have overlooked a significant breeding factor in the mating of the

queen. We have always known that the breeding queen is mated with a drone from an unknown source, seriously affecting the progeny of the queen, because no one knows the value of this drone. We must acknowledge the possibility of the breeding queen being mated to an inferior drone. The value of the breeding queen when she is selected for individual performance only, is minimized by this fact.

I have seen the work of queens produced from different breeders which were apparently doing uniformly, but a check on the progeny showed many variations, proving that the mating of the breeders has a distinct effect on progeny.

My experiment with these tests was carried out with a definite number of bees and all queens introduced at the same time so they would have an equal chance. The progeny from one queen made such a poor showing that I decided to eliminate her as a breeder. I had one queen under test that produced progeny with a fine record but this queen did not evidence greater breeding possibilities than any of the others. She must have mated with an extra good drone.

The value of a queen must be determined by her ability to transmit her fine characteristics to her daughters and we cannot over-emphasize this point in our efforts to improve our stock. Queen breeders are being led into new fields of investigation which may prove burdensome to the majority of them since they have no inclination to carry on experiments which require time and effort. However, some of us breeders must undertake a program of improvement. I have endeavored to adopt a breeding plan outlined and recommended by Dr. Mackensen which is proving interesting and profitable. It requires keeping



Loading a Canadian truck with package bees to go north. This business, to live, requires queens that give many bees quickly for the crop.

records all the time, since the mother of every queen must be identified.

In this work there will be many obstacles and possibly the ultimate result will be disappointing, but by continuing the program for years, we should notice improvement in stock. The trouble will be to find queens with desirable characteristics and with ability to transmit them to their daughters.

The first consideration must be to find colonies which meet the necessary requirements and if they are not to be found, we must endeavor by cross breeding to produce the things that are necessary in the individual.

Gentleness and productivity are the main breeding points. The desire of beekeepers to secure a bee suitable for various localities with different climatic conditions has led to the popularity of Italian bees.

I have been nursing a pet theory that queens improperly mated may fail early after introduction. It may be a cause of supersedure.

The selection of breeding queens starts in the yards where colonies are checked for the desired earmarks. Those which have the probability of potential breeders are used for check grafts. Here, record keeping starts. The colonies must be numbered and this number must be used continuously during the various manipulations, especially when cells, virgins and queens are moved around.

We are now ready to graft from the selected colonies and after ten days the cells are placed in nursery cages in which the first check is given, including body type and color markings. Virgins showing promise are introduced to queen nuclei where, after laying, they are again checked for type and size, and those showing promise are introduced to full colonies where they are kept under observation and checked at the end of the season.

With records of the performance of the daughters, we are now able to determine the value of breeding queens to be used the following year. Only the best queens will be used. In the final analysis one should know whether or not this program will enable the breeder to perpetuate a good strain. It looks encouraging.

During the checking, we have found that it is quite evident that queens produce daughters with different body types. The daughters of some queens have long slender bodies, others have thick ones, and one group had a short body. Subsequent grafts proved that queens invariably produce daughters with a like body type. Some queens consistently produce heavy laying daughters, but variations are noted in the size from time to time which is attributed to conditions during the development of the cells. The shape of the queens remain the same re-

gardless of the size.

The desirable earmarks of a good queen are a thick, heavy body, although whether the body type has a bearing on productivity, I do not know. Small queens have been found heading strong colonies and large queens have been found heading weak colonies.

It would be necessary to have comparative records to show all conditions at the time the queens were introduced. There is a possibility that a small queen will maintain desirable colony strength, providing the colony is strong to start with. I hope to make a check on queens with various body types in the future and settle this question to my own satisfaction.

We do have confidence, however, in large queens. It is reasonable to assume that they have greater capacity. We should try to produce queens as large as possible. The buyers also appreciate large queens and their demands must be considered.

The breeding work being carried on at Atlantic, Iowa, to produce a resistance strain is fundamentally the same as the one which we are considering, with the exception of the fact that the reader usually has no facilities to work with disease. Regardless of the characteristics, we must find queens which will transmit the qualities she has to her daughters.

It may be possible to find a queen which will produce resistant bees, but we do not know how long such a strain can be perpetuated. It may easily be lost and the work must be started all over again unless the work is done under isolated conditions.

Of course, there are many obstacles in the way of improving our stock which may discourage many queen breeders, but when we realize the importance of the work, we should strive to adopt a program which will result in better bees.

Death of Edward F. Bigelow

Dr. Edward F. Bigelow, well known naturalist and editor of "Guide to Nature" died at Greenwich, Connecticut, on July 13, after a long illness. He had attained the advanced age of 78 years.

Dr. Bigelow was prominently associated with the Agassiz Association, an organization of nature lovers, and was largely responsible for the development of the Bruce Museum and the retreat known as Arcadia, at Greenwich.

His name is familiar to the readers of this magazine since he long kept a few bees and wrote occasionally for the American Bee Journal. He

was an enthusiastic photographer and many of his bee pictures have been widely published.

The Top Entrance For Wintering

(Continued from page 453)

not only holds everything snug, but closes up most of the opening. Now, a hole about an inch long is cut in the paper that is left at the end of the lath. In the spring when the bees want a larger entrance they will eat out the remaining two or three inches of paper.

Figure No. 2 shows this entrance with half of the paper removed. Figure No. 3 shows two colonies with the paper and lath in place and the entrance cut. If a center entrance is desired the shingles may be put in between the hive bodies and the entrance finished in the same way.

If packing is used on the front, another center entrance can be made very easily by using the tapered shingles. Figure No. 4 A tunnel can be made by nailing a thin board on the top and one on the bottom of two of the $\frac{3}{4}$ inch strips of shingle. The tapered ends of the shingle are to be inserted between the hive bodies, or if it is to be a top entrance, under the cover. The boards must be long enough to extend the width of the hive, the width of the boards to be determined by the thickness of the packing used. The boards form the tunnel and the tapered ends close up the openings on the sides.

We do not use any packing on the front of the hives, and use the top entrance made with the two shingles and lath. Figure No. 5 shows a package that has just been unpacked. It has eight colonies, two facing in each direction.

State of Wisconsin, Department of Agriculture And Markets

Take notice that the Department of Agriculture and Markets of the State of Wisconsin will hold public hearings at the following times and places:

Court House, Menomonie, Wisconsin, October 5, 1938, 2 P. M.

Court House, Appleton, Wisconsin, October 7, 1938, 2 P. M.

Dept. Agriculture and Markets (State Capital) Madison, Wisconsin, October 11, 1938, 2 P. M.

For the purpose of amending and issuing standards and regulations pertaining to honey and for receptacles therefor and governing the marks or tags required upon receptacles therefor.

Dated at Madison, Wisconsin, this 21st day of September, 1938.

Dept. of Agriculture and Markets,
Ralph E. Ammon, Director.



Wintering Nuclei in a Compartment Hive

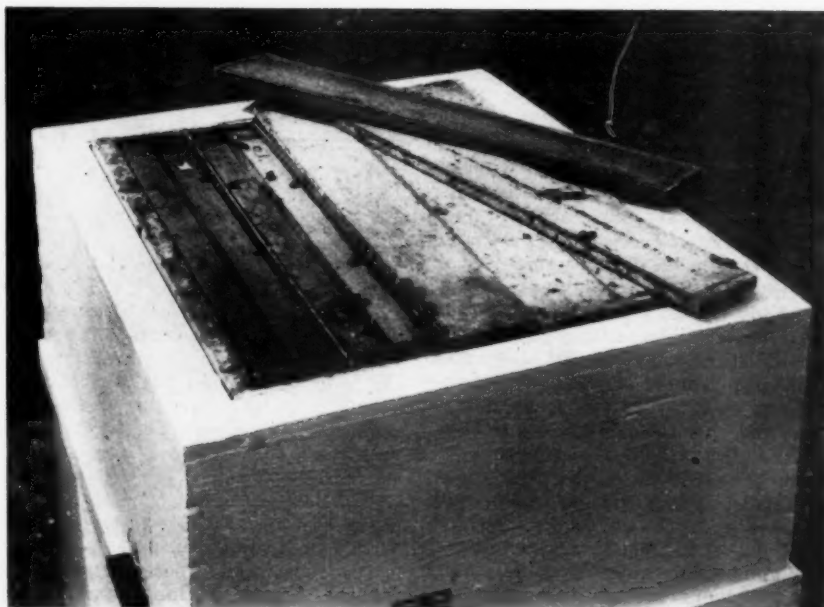
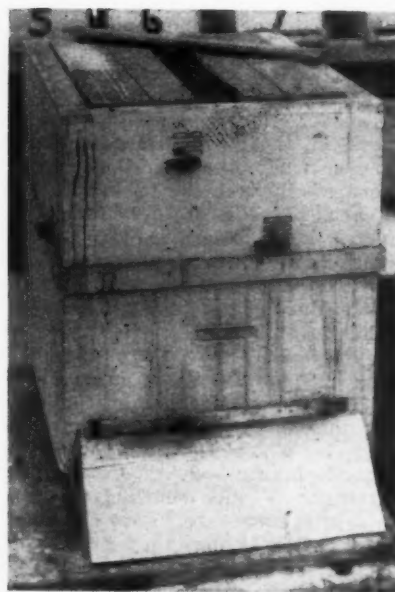
Photo above and the first to the right were taken by W. M. Copeland of Lexington, Massachusetts, while he was at the Convention in Washington last fall. The other two were furnished by the Bee Culture Office of the Department of Agriculture. They seem to be enough to show the double walled hive used and how the compartment top hives are made for the nuclei.

THESE pictures show nuclei used in testing inseminating queens in quantity lots at the United States Beekeeping Laboratory, Beltsville, Maryland. They were devised by W. J. Nolan, and used in his genetical studies of bees and comparison of races.

These nuclei require fewer bees and less equipment than full colonies. A compartment hive body affords a convenient shelter for the nucleus. It is merely a standard 10-frame hive body, screened on the bottom, and divided into five bee tight compartments by removable screened partitions. The division boards are made of copper screening with tin rims. These partitions slide in grooves in the ends of the hive body.

Each compartment holds a two-frame nucleus and larger nuclei may be made by pulling out the necessary number of movable partitions. Each compartment has its own inner cover and outside entrance. The compartments are kept over a full depth hive body.

The two-frame nuclei may be successfully wintered with sufficient young bees and stores by placing a double wall collar around the hive body after it has been placed over a colony in a double wall hive. The original entrance for each compartment is connected with the outside by a piece of glass tubing or other material extending through the collars. A sawdust tray and telescope outer cover are placed on top. The details are given in the picture.



You Can Do It!

A Beekeeper's Handbook of Beeswax Formulas and Suggestions.

By J. T. MacMillan,

New York.

WITH all the research you have done in the various uses of beeswax, Jim, why don't you collect the useful items into one group? After reading, most apiarists file the American Bee Journal for future reference. So, when the occasion arises in which information about beeswax may be needed, the formula will be easy to find." Thus spoke my partner in life's misery—though no longer quite that bad since I became a beekeeper myself.

Explaining further, she went on, "When I say useful, I mean helpful to the housewife, to the beekeeper, and perhaps in making suggestions to your honey customers in such a way that they will be brought to a keener realization of the many beneficial qualities of the honeybee.

"For instance, take those kitchen knives and forks with the loose handles. Remember? You told me not to throw them out as you could easily repair them in a jiffy."

The better half had me there. I could, but had forgotten. One cutler's cement is made of one part beeswax, two parts of rosin and one of plaster of Paris. Beekeepers can try substituting a hard propolis for the rosin, mixing together above gentle heat. The blades will not come out of the handles again.

Then, too, there is nothing better than beeswax for preventing the family silver from tarnishing, or, the little used but highly prized tools from rusting. A small amount of white wax mixed with a few drops of turpentine should be placed on a soft rag. Rubbing this vigorously over the silverware will prevent discoloring for long periods of time.

Any grade of beeswax, if clean, will do the trick for tools and machinery, but a few drops of machine oil should be added instead of turpentine. Beeswax protects **indefinitely**. Whenever and wherever it is used for protecting purposes, be sure to rub as vigorously as you can. The heat induced by the friction, changes the molecular structure of the wax, forming one of the most continuous and most impervious films of protection ever known.

This same wax-turpentine mixture is good for increasing the life of rope running through pulleys or subjected to other friction. They are also smoother to handle.

Rubbing it into the wires of a Christmas tree light set makes it possible to use an indoor set on a tree outside the front door—and without danger of shorts. My set of 24 lights—indoor, cheaply made type—has one application of this mixture, applied seven years ago. Sleet, snow or rain, they still shine out their holiday cheer.

Again, if heated and then painted on with an old rag or brush, this mixture will eliminate all friction squeaks in summer-time cane and willow furniture. They too, will last longer after this treatment.

Excellent specimens of some of summer's cut flowers can be kept for winter bouquets. Keep a mixture of equal parts of beeswax and paraffin barely warm enough to remain in a liquid state. Use freshly cut flowers. Dip them entirely, avoiding air bubbles by twisting. Withdraw instantly. They will be natural, unlike the store flowers, and will stay that way longer than those one buys.

The large earthenware crocks and jars used for making sauerkraut and for storing other pickled delicacies are quite expensive. If badly cracked, they can be repaired. Apply thin coats of a stone cement, building up until the crack is filled. One good formula: six parts each of rosin and pitch, one part beeswax and one-half part of ordinary plaster, or brick dust. Using no more than a few drops of turpentine to help, mix together over gentle heat and apply while yet warm. Propolis can be used here also by doubling the quantity of plaster. This cement will not withstand the effects of much heat.

For filling small cracks and holes in furniture, beeswax, combined with Indian red and ochre colors, is good. A little shellac should be mixed in, and colors proportioned to match the furniture. Apply cold.

A fine furniture polish that you need not be afraid to use on the piano, is made largely of emulsified

beeswax. The formula is one of beeswax. The formula is 1 pound of wax, two and a half ounces of potassium carbonate—potash—one quart of water and one and a half pints of turpentine. Shave up the waxes finely. Dissolve the potash in a pint of the water. Pour the wax in slowly, boiling the solution. Add water to make up for any loss by evaporation. When partial saponification—soap-like appearance—occurs, stop the boiling. **Slowly**, add the turpentine. At all times stir constantly.

When cool, this polish will impart the soft sheen that is so desirable for living room furniture. It has that enduring film of protection too. Apply sparingly, in even coats, and rub briskly with a soft rag.

The high quality of the **Cover Contest** photos would indicate that beekeepers now are practicing photographers also. For those doing their own printing and enlarging work there is a polish that will add to the shadow detail and general clarity of the **Journal's** reproduction.

The formula is one-tenth ounce each of spermaceti wax and beeswax, dissolved in one ounce each of benzol and turpentine. Or you can use one-quarter ounce of beeswax, adding a piece of ceresin or carnauba wax the size of a pea. Shake well.

Apply this with a flannel cloth to a sheet of plate glass, or better, to a ferrotype plate. Polish with a silk rag. The wet, glossy paper prints are rolled face down onto this surface, taking care to avoid air bubbles.

These photos will not crack up into fine hair lines the way commercial prints do with time, and the finish is more pleasing to the eye.

This ferrotype formula, with beeswax only, is used to preserve charcoal drawings and other fragile sketches. It should be applied with an atomizer.

Finally, as my wife reminds me, beeswax brightens up parchment lamp shades and saves my fishing tackle, guns and golf clubs from an appearance of premature old age. Even the needles on our Christmas tree, will hang on several weeks longer if I use the atomizer.

Sunlight and Nectar

By R. G. Maclachlan,

Australia.

IT is generally known that our flowering plants can no more grow without light than without soil and water. The leaf green or chlorophyll of plants is able, in the presence of sunlight, to use the carbon dioxide of the air to form sugar, which can be converted into starch for storage or into cellulose for plant fibre. And among the many interesting facts investigators have made known are two: that sunlight must reach a certain intensity before the chlorophyll responds to it; and that, given a strong enough light, longer duration is more effective than greater intensity. In some of the Boze Institute experiments at Calcutta, it was found that carbon assimilation did not begin till 45 minutes after sunrise, and ceased again before sundown, while it was four times as rapid at noon as at seven in the morning; but once the light is strong enough it is time that tells.

All plants, however, do not respond to light in the same way. There are "short day" plants and "long day" ones. Some interesting experiments have been made with plants in this connection. Plants can be grown under conditions where electric light takes the place of sunlight and in such experiments the "day" can be lengthened or shortened at pleasure. Where the day is shortened for long day plants, growth is promoted, but flowering hindered; with short day plants the same thing happens when the day is lengthened. One of the many short day plants is the soy bean and it has been possible to grow two crops of soy bean in one season: the first crop was hastened by shortening the "daylight" period, and then the "daylight" period was lengthened to hasten growth for a second crop.

Short day plants flower mostly in spring and autumn or in winter in mild climates; long day plants, which include most of our agricultural crops, flower in the long days of summer. And it seems that the longer the day the more their seeding time is hastened. To give an instance—in Finland and north Norway barley seeds in 89 days after sowing, while in Sweden it takes 100 days. The air is warmer in Sweden,

and the light stronger, but in Finland and north Norway the summer days are longer, and this longer day hastens seeding more than stronger light or warmth.

It seems to me that this general finding can be applied to honey plants, and I shall point out a field where investigation might yield some interesting and valuable results. I can only make a broad statement, and do not wish it to be taken as proving anything, but only to show a line of observation worth following by those nearer at hand than I am.

In the American Bee Journal for July, 1935 (page 331) there is a table showing average colony production for the years 1930 to 1933 for each of the 48 states of U. S. A. and in the Canadian Bee Journal for the same month (page 191) is another table showing average colony production for 1933 and 1934 of each of the provinces of Canada. I have been studying these tables with a map of North America before me, showing the position of states and provinces, and shall briefly point out some of the things noticed.

Speaking broadly, average colony production increases as we go northward in North America; that is, into regions of longer summer days. The average colony production for all the states is about 35 pounds a year. The fortieth parallel of latitude seems about midway across U. S. A. and south of this line most of the states fall below the 35 pound average, while north of the line most states rise above it. There are, however, notable exceptions on both sides. Thus Louisiana bordering the Gulf of Mexico averages 45 pounds and Arizona has the same figure, while Pennsylvania shows only 21, and Maine 22 pounds. Still the further we go north the bigger the honey harvests, as a whole, and when we pass into Canada they are bigger still.

This is very remarkable, for while in some southern states the bees can work nearly all the year, in some northern states and in Canada their active period is only five or six months. But it seems that the shorter this active period the more

honey they get. Thus Montana averages 105 pounds and North Dakota 97, while further north still, Alberta can show 160 pounds for each of her ten thousand colonies. It thus seems that the worse the general conditions are for beekeeping the better the harvest. In these days of package bees, a very large proportion of the bees that gather these northern harvests are bred in the South, and since on the whole, southern methods are just as good as northern methods, we must explain the greater harvests by the greater yield of honey by the northern flora.

I think it likely that the principal honey plants of North America are long day plants whose flowering, seeding and nectar-producing activities are greatly stimulated by the long summer days of the northern regions. And this increased nectar flow more than makes up for the short harvest time reckoned by months.

The strength (and weakness) of this explanation is best seen if the states and provinces are taken in strips running north and south. We can make five such strips. (1) The Pacific Coast strip from California to British Columbia, (2) the Rocky Mountain region, from Arizona and New Mexico to Idaho and Montana, (3) the western Mississippi Valley region, from Texas and Louisiana through North Dakota and Minnesota to Alberta and Saskatchewan, (4) the eastern Mississippi Valley region from Alabama through Michigan to Ontario, (5) the Atlantic Coastal region from Florida to Maine and Quebec. [See accompanying map.]

It is this last region that tells most against the explanation, for though Florida shows only 21 pounds to the colony, Maine is hardly better with 22 pounds, while bordering Florida, Georgia averages 32 and not far from Maine, New York averages 38 lbs. This Atlantic strip does not seem to respond much to the long day influence, until we pass into Canada, where Nova Scotia's few colonies average 45 pounds and Quebec's 70,000 about 65 pounds. The two ends of the line thus make an argument for the long-day influence, since Quebec beats Florida three to



one, and more, and Georgia two to one.

In the eastern Mississippi region the long-day influence seems stronger. The most southerly group of states, Mississippi, Alabama, and Tennessee average only 18 pounds per colony. Kentucky, Indiana and Ohio, further north, average 29 pounds, while Wisconsin and Michigan show 49 pounds, and in Canada, Ontario's nearly 200,000 colonies average 62 pounds.

The western Mississippi groups tell a similar tale, only that Louisiana has an average of 45 pounds, though Texas alongside her has only 27. But Louisiana's 45 pounds is not reached till we get to Iowa with 56 pounds. However, the most southerly group, Texas, Louisiana, Oklahoma and Arkansas averages only 27 pounds while, to the north, Kansas, Missouri, Colorado, Nebraska and Iowa have 33. Then there is a great jump, for South Dakota shows 64, North Dakota 97 and Minnesota 70 pounds, and across the border of Saskatchewan averages 80 (104 for 1933) and Alberta 160 pounds.

The Rocky Mountains region is good through, and its southmost states, Arizona and New Mexico, are not far below Utah and Nevada. Arizona has 45 pounds, New Mexico 38, Utah 48, and Nevada 45. But then again comes a great jump for just north of Utah, Wyoming has 70 pounds, Idaho 57 and Montana 105. Thus the most arctic of all the states has the biggest honey harvest average.

The testimony of the Pacific slope is less and California has nearly 41 pounds average, Oregon almost the same, Washington 43 pounds, and British Columbia 57. So here again the cold North has it.

The testimony of the degrees of latitude seems pretty consistent. What is very remarkable is that below the 42nd or 43rd degree of latitude the harvest averages increase steadily, the increase from south to north over a thousand miles being from 10 to 30 per cent according to region, so far as one can judge from the figures given. But once past 42 degrees or thereabouts, the averages jump away and double themselves in a short distance. Thus Nebraska shows only 32 pounds, bordering it South Dakota has 64 (latitude 42° running through that state) while North Dakota has 97. Similarly Illinois, Indiana and Ohio average less than 30 pounds between them, but just to the north Wisconsin and Michigan average 49 pounds. This sudden jump is noticeable in all regions except the Pacific slopes. The Atlantic region shows it, for the 38 pound average of New York State rises to 65 pounds in Quebec Province. If the lengthening days are the cause of the increase there may be a point at which the greater daylight period becomes doubly effective. But the increase may have other causes. Anyway it is worthwhile to look into the matter.

A Strange Occurrence

About two weeks ago I had a swarm settle on a low branch of an apple tree. I sawed off the branch they were on and carried it a distance of about two city blocks and placed them in a hive in a row with about a dozen other hives of bees. They came out of a hive three bodies high, and since it was such a large swarm, weighing almost as much as a 24 lb. sack of flour, I gave them three hive bodies at once so they would have plenty of room. While I was doing this, a second swarm came out of the same hive and settled in the very top of a tall pear tree. They were so high it was dangerous to attempt to get them, so I decided to let them go. At five o'clock that evening I happened to be watching and the swarm that had settled high in the pear tree suddenly came down, swarmed along the row of hives where I had placed the first swarm and entered the same hive in which I had placed the first swarm. What I want to know is, how did they know where I had placed the first swarm? Fully fifteen minutes elapsed before the second swarm came out. The hive was about two city blocks from where they settled. They could not have seen me put the first swarm in the hive, as high trees obstructed their view. If any of your readers can explain this, I would like to hear from them.

Sam Short,
Ohio.



Olivia St. John Gilbert.

THE dominant figure in Hawaiian beekeeping today is a woman. Because I no longer live in Hawaii I can give you her story realistically and interestingly. It has not been given before because this most extensive beekeeperess in the world shuns publicity.

Perhaps you expect me to describe a brown skinned maid or matron with a long and difficult Hawaiian name; but most of the leaders in Hawaii, beekeeping included, are Americans. The Queen of Hawaiian Beekeeping claims Colorado as her birthplace. It was from this state that she migrated to Hawaii in her teens to teach school. Like most attractive school "ma'ams" she soon married. In her case she was attracted to the bachelor beekeeper, Oswald St. John Gilbert; so my story is about Mrs. Olivia St. John Gilbert.

Allow me to review briefly some historical background. Algaroba is the Spanish name for a variety of mesquite that was introduced into Hawaii by Father Bachelot in 1828 from the Jardin du Roi, Paris, from seeds brought there from Chile. Bees were introduced into Hawaii in 1857 by the Royal Hawaiian Agricultural Society, 29 years after the algaroba. In 1893 the trade winds blew a swarm of bees into the dooryard of the Gilbert home, Lee St. John Gilbert hived the swarm and thus the two brothers began their beekeeping careers as did Amos I. Root in a different land many years earlier. The Gilbert brothers were of

Hawaii's Beekeeping Queen

By H. E. Coffey,

Texas.

English stock, Australia being their birthplace; they had no knowledge of beekeeping. A. B. C. and X. Y. Z. of Bee Culture was their sole guide and the stray swarm the sole foundation of their beekeeping careers. The brothers later formed a corporation capitalized at sixty thousand dollars and called the Sandwich Islands Honey Company. In telling of their experiences in later years Oswald said: "For the first seven years we were the joke of Honolulu. That there could be money in honey production was beyond the wildest conception of the average Islander." In 1918, Judge Leslie Burr wrote an article for "Gleanings in Bee Culture," a part of which was quoted in the "Paradise of the Pacific" magazine entitled "O. St. John, the Bee King" (Vol. XXXI, No. 4). At that time the Gilberts owned 10,000 colonies of bees. Soon after Lee

died and the entire bee business fell to the management of Oswald who was himself in ill health.

Oswald St. John Gilbert was a man of ability in many lines. He invented the cane loader that is used on nearly all the sugarcane plantations in Hawaii today. He operated an extensive wood and charcoal business that for many years brought him in an income of more than a thousand dollars per month. He organized the Algaroba Feed Company that ground the algaroba beans into stock feed, a twenty thousand dollar corporation. He undertook various agricultural ventures in dairying, poultry, cotton growing, watermelon growing, etc. For a time he was financially interested in the Alexander Young Hotel which was his home before and most of the time after his marriage. But as he advanced in years his health continued to fail. Some ten



Mason St. John Gilbert, heir apparent to the Gilbert beekeeping.



H. H. Winger, present manager of the apiaries.

years after Judge Burr's visit he died. Since he had been a sick man so long his affairs were not left in very prosperous condition.

Thus it was that his wife Olivia was compelled to undertake the operation of the bee business left her. She knew nothing about bees since Oswald had not made any effort to inform her concerning his business. She undertook with enthusiasm what was to her a new venture. With Japanese help she continued her late husband's policy for a time. American foulbrood, termites, and other ravages of time and circumstances had reduced her heritage to some 1800 colonies by 1933. Sometime prior to that date Mrs. Gilbert had purchased the stock of all other interested parties in the corporation so that she and her son, Mason, became sole owners of the business. Free to manage her affairs in her own way she employed the writer in 1933 to undertake to salvage her beekeeping interests. It was a hard fight against disease, but with four seasons of effort, the job was rather completely done as I have before described.

Last year (1937) Mr. H. H. Winger, formerly of California, took the writer's place. That the business is progressing may be judged from the fact that Mrs. Gilbert's producing colonies now number more than two thousand and Mr. Winger tells me that he has prepared two thousand new full depth extracting supers for the 1938 season. These are in addition to the supers already in use.

Whether or not Mason St. John



Lee St. John Gilbert who, with his brother, founded commercial beekeeping in Hawaii in 1893.

Gilbert will carry on the tradition of his father and mother remains to be seen. He is, to say the least, a clever youth and has worked several seasons with the bees during the extracting period. This year he will enter a Paris university after his graduation from a Honolulu preparatory school.

Some of the progressive changes Mrs. Gilbert has made in her beekeeping business are: All hive frames have been wired and manufactured foundation is used instead of the homemade foundation formerly used. Colonies are periodically inspected for disease and infected colonies are now burned. Power extractors are used and the honey transported to a central extracting plant by means of a modern truck. An efficient steam boiler has been installed. An air-tight wareroom for fumigating and carrying combs through the winter season has been provided. Bee yards have been placed on stands and fenced against livestock. Many yards have been moved to more strategic locations. The wood and charcoal business has been abandoned to allow for more growth of timber (all timber being algaroba). Side lines such as beeswax candles and honey jelly have been developed and revival of the algaroba feed business is in prospect.

Mr. E. R. Root became very well acquainted with Mrs. Gilbert in 1937, and he said to me that his impression was that she was a person of real character and one of the most pleasing personalities he had ever met. It is this quality and here rare good sense and business judgment that has made her thought of throughout the Hawaiian Islands as the leader in beekeeping there.



H. Kataoka, longtime Japanese employee of the Sandwich Islands Honey Company.



A typical Hawaiian woman.

Whenever Senator George Cooke, or Harold Rice, or any of the other men with extensive beekeeping interests have problems arise Mrs. Gilbert is usually consulted and her advice followed. The title I have suggested for her is no mere flattery.

—ABJ—

Holding Swarms

I read with amazement the article by T. T. Jones on page 343 in the July 1938 issue of the American Bee Journal, entitled, "Holding Swarms." Mr. Jones states that about "ninety" per cent abscond. I certainly can't understand this, as I have had more than twenty swarms this year, mostly "after swarms," and have not lost a swarm. Mr. Jones seems to blame the whole affair on virgin queens. I think after swarms are mostly comprised of young bees and virgin queens, and even though I placed two of the after swarms in hollow fruit trees in my orchard, both of them are doing well and seem proud of their home. I wonder what kind of hives Mr. Jones has his bees in? Something is wrong with his method.

I always hive the swarms within fifteen minutes after they settle. I always sprinkle them with water before attempting to hive them, as this was what my father did when I was a boy, fifty years ago. I have not lost a swarm within the last two years on account of absconding. If Mr. Jones will handle his bees as above indicated and give them good clean homes to live in I think his troubles will be ended along that score.

Sam Short,
Ohio.

The Chemistry and Technology Of Beeswax in 1937

By L. Wilson Greene,

Maryland.

IN every field of human endeavor it is often helpful to pause a moment to consider the progress made in that field during a given period of time. Not only is our knowledge increased thereby but a study of such progress frequently gives rise to new ideas which lead to further scientific advancement.

The present review is concerned with that versatile raw material, beeswax, which continues to find new technical applications although it has been known to man since the dawn of history. The period chosen for study covers the literature recorded in Volume 31 of **Chemical Abstracts** for the year 1937. The **Chemisches Zentralblatt** has been examined for certain patents not abstracted regularly in the American journal. There are many more abstracts relating to "wax" that might be construed to refer to beeswax, but to keep the review within bounds, these have been omitted.

Before we discuss beeswax itself it may be interesting to note that two investigators have studied the dietary requirements of the wax moth, *Galleria mellonella*, Haydak (1) showed that beeswax is not an essential constituent of the food of the larvae, in fact, two generations of wax moths were reared successfully on media entirely free from wax. The earlier work of Metalnikov (2) was confirmed by Roy (3) who found that the small larvae remain alive for only a month when fed on a diet consisting solely of wax. Apparently the larvae ingest nitrogenous materials from the hive and it is considered doubtful whether the insect lipase can hydrolyze wax. Incidentally, Whitcomb (4) states that paradichlorobenzene is the most convenient and effective insecticide for protecting stored honeycombs from the wax moth.

Very little work was reported on the physical and chemical properties of beeswax although Frei and Groetinger (5) measured the electrical energy released by the polarized wax when melted between electrodes. Grodman (6) described methods for

determining the acid and saponification values of beeswax.

Minor (7) obtained patents in England, France and India on a method of refining the wax. It is freed from oil (perhaps he means easily saponifiable matter) by agitating the molten material for three minutes with a small quantity of sodium or potassium hydroxide solution, followed by neutralization with hydrochloric acid. The process is repeated a second time. The purified wax is separated and mixed with drying oils, castor oil, neatsfoot oil, carnauba wax, etc. for the preparation of lacquer, leather oils, polishes and shoe creams.

In the field of plastics and molded products, Mantell and Rubenkoenig (8) developed a shellac substitute only slightly inferior to the natural product in hardness and toughness of film. They made this by fusing Manila copal resin with 30% of a partially oxidized fatty acid and 10% of beeswax. Yoshida (9) prepared crayons and water color paints from vegetable oil, casein, ammonium hydroxide, vegetable wax, beeswax, hydrogenated oil, sodium hydroxide and water. Old and new methods for the manufacture of candles were reviewed by Lodl (10) and Hill (11) described certain dyes for coloring candles and wax tapers.

Coating and sealing compositions were proposed by several workers. Mitchell (12) used beeswax in a process for making pyroxylin-coated wrapping tissue and Gehman (13) waterproofed cellophane sheets with a mixture of beeswax and a rubber derivative. The Wingfoot Corp. (14) was granted a patent covering a similar composition. A mixture of beeswax and rubber latex was proposed as a sealing composition by the Dewey & Almy Chemical Co. (15) Of 29 protective methods and materials, Chrzaszcz and Tilgner (16) found that a wax coating was among the most effective for maintaining quality of sausages for prolonged storage. Shebrovski and Sokolov (17) reported that adhesive qualities of treated rosin varnishes were im-

proved by the addition of a mixture of beeswax and glyptal resin. The mouths of bottles or the like were treated with beeswax to render them nondripping, according to a process patented by Ford (18). A resist for use in etching glass, made from rosin, beeswax, paraffin, asphalt, chrome yellow, varnish, turpentine, fat, and japan drier was proposed by Polasik (19).

Feytaud and Lapparent (20) developed the following sanitary cleaning and polishing composition for use on floors and furniture: turpentine spirit 65, redistilled terpeneol 5, pulverized derris or cube root 3, bornyl acetate 5, bornyl chloride 15, zinc resinate 20, beeswax 85 and spermaceti 5 parts. Another product for floors, furniture, stone, etc., comprising rosin, calcium hydroxide, paraffin, beeswax, ceresin, formaldehyde, aniline yellow and nitrobenzol, was patented in Italy (21). Selleck and Ray (22) proposed the following composition for polishing metals: tripoli powder, vinegar, beeswax, white corn meal, diatomaceous earth, water and condensed milk. A polishing paint for decorating walls was developed by Ernst (23). He used a mixture of oil, varnish, pigment and beeswax. A shoe cream patented in Poland (24) contains carnauba wax, beeswax, shellac and turpentine.

According to Heberlein and Weiss (25) crepon and like effects are produced on textiles by impregnating them with a solution containing beeswax and rubber. Galvin (26) used a mixture of beeswax, fat, olive oil, benzene and soap as a dressing composition for rayon and Ladola (27) dissolved the wax in trichlorethylene, to which stand oil and rosin were added to prepare a dressing for artificial silk.

Wetting, emulsifying, dispersing and finishing agents for the textile, leather and other industries have been prepared from beeswax. In the process of Robinson (28) the agents are formed by treating the wax with aromatic compounds. Wechsler and Segessemann (29) combine beeswax with iscamyl alcohol or 2-ethyl-

butanol and sulfonate the resulting products.

A grease suitable for leather and skins comprise resin, paraffin, liquid petrolatum turpentine oil, beeswax, neatsfoot oil, linseed oil and a few drops of bitter almond oil, according to the patent of Gros (30). A wax paste for raw leather was prepared by Fogli (31) from beeswax, paraffin, heavy benzene and fat-soluble dye.

In the production of Japanese type "silk" paper for manifold copying, Shcheglov (32) used a coating composed of paraffin, petroleum pitch, dye, rosin, liquid petrolatum, yellow petrolatum and beeswax. Tomsicek, Dodge and Calva (33) proposed a mixture of chlorinated rubber, resins, solvents, plasticizers and beeswax as an adhesive for binding papers. Fibrous materials such as asbestos, pasteboard, vulcanized fiber or pressboard, are impregnated with beeswax to make packing materials for use in apparatus used in the manufacture or storage of fluorine (34).

According to Ehrenhaft and Groetzinger (35) the thermal conductivity of beeswax used for insulating cables is raised by allowing it to solidify in an electric field. A mixture of dibutyl phthalate and beeswax was used by Katzman (36) to impregnate or coat electrical condensers.

The following process is specified (37) for solidifying benzene: beeswax is dissolved in benzene, the mass is saponified with sodium hydroxide and a small amount of sodium or ammonium stearate is added. A recent British patent (38) describes an upper cylinder lubricant, completely soluble in motor fuel, composed of paraffin or ceresin, beeswax and an aromatic hydrocarbon such as naphthalene or anthracene. Kinsley (39) proposed a mixture or gum damar, beeswax, gum tragacanth, French chalk and emery as an abrasive bite-rim composition for use in dentistry.

In a study of the disintegration of coated medicinal pills under artificial or natural conditions, Ahonen (40) reported that wax-coated pills are capable of passing through the entire digestive tract without change. Buer (41) patented the use of beeswax for coating tablets containing lecithin. The use of hard hydrogenated castor oil as a substitute for wax in U. S. P. ointments was suggested by Fiero (42), and a veterinary containing beeswax intended for the treatment of coccidiosis, was patented by Chuck (43).

According to Stillwell's patent (44) beeswax may be used in a composition for making chewable hollow containers or capsules, intend to contain mouthwash. Dechaume (45) analyzed several brands of lip stick and found white wax among the in-

gredients. A depilatory suggested by Fischer (46) consists of a mixture of rosin, beeswax, musk ambrette and labdanum, and Hall (47) developed an "anti-sunburn" preparation consisting of glycerol or glycol monosalicylate, stearic acid, lanolin and beeswax.

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ABJ

Featuring Special Honey

In his articles on his southeastern trip, M. G. Dadant remarked about the wonderful quality of sourwood, tupelo and other southern honeys and the unfortunate fact that such honeys were not distributed in a special line of trade to be featured like the Hymettus honey of Guatemala, the Acacia of Hungary and others.

We have been happy to receive one or two samples and feature folders from Messrs. Prost & Colahan, 228 West 23rd Street, New York City who are distributors of many different honeys exactly in line with the suggestion that Mr. Dadant made.

We find, among their imported honey, Canadian, Chilean, Cuban, Czechoslovakian, Dutch, English, French, Greek, Guatemalan, Haitian, Hawaiian, Hungarian, Italian, New South Wales, New Zealand, Swedish, and West Australian.

In domestic honey, they distribute Alabama Cotton "Meliflor," California Clover, Orange Blossom and Sage; Connecticut Sumac; Florida Palm; Georgia Gallberry, Tupelo; Massachusetts Clethra; New York Buckwheat, Locust, Raspberry; Texas Mesquite and Huajilla. Most of the domestic honeys are under the label of the producer.

This is a step in the right direction and domestic honeys with limited production especially will seek special markets where they will not be in competition with volume production.

ABJ

News Note

Mr. Harold Witte, of Aledo, purchased a swarm of bees on a limb from Thompson Sisters of that same town. This was a very large swarm and was placed in a regular 10-frame hive, on full sheets of foundation. During the following three weeks, Mr. Witte placed on the hive at different times five comb honey supers. At the end of the three weeks after the swarm was hived, a swarm issued from this hive. Mr. Witte, thinking he had plenty of room on the hive, looked into it and found that three of the section comb honey supers were entirely filled and capped and two were filled, but not all of the cells capped.

Will C. Egbert,
Illinois.



These are all females of the same species of bumblebee. The difference is due to feeding.

Social Life of the Bumblebee

By M. D. Farrar,

Illinois.

BUMBLEBEES are social insects, since they maintain themselves by means of a colony in which the queens and workers have a part in rearing the males and females so necessary to the survival of the race. Their social life, however, is not so highly developed as that of their cousin, the honeybee.

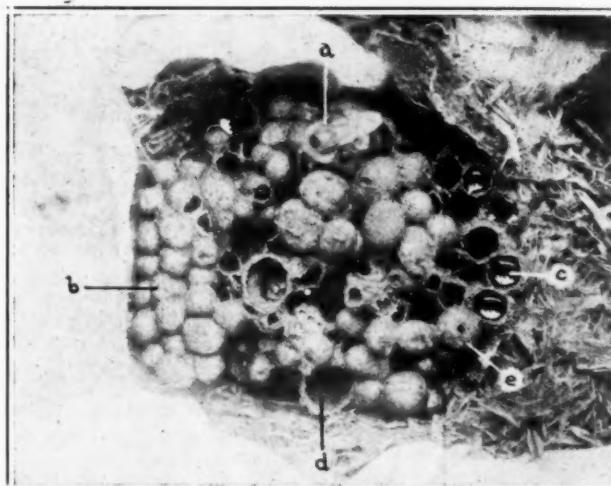
The knowledge we have of Illinois bumblebees has been largely acquired through the 20 years' observation and study of them by Dr. T. H. Frison, Chief of the Natural History Survey Division, at Urbana. Dr. Frison, who is now recognized as a world-wide authority on this insect group, tells me that he has found 16 different species of bumblebees in Illinois. Perhaps you thought bumblebees are all alike, but they are so different that the different kinds will not interbreed.

The bumblebee colony differs from the colony of the honeybee in that the bumblebees remain as a colony only during the growing season. Each fall all the members of the colony die except the fertilized queens. They hibernate through the winter until the next spring, and on their successful passing of the winter depends the continuance of the colony the next year.

The first warm days of spring awaken the queens for the new year. The first queens to appear arrive with blooming of the "Dutchman's Breeches", on which they feed. Within a month the other bees are awake seeking their favorite flowers. The first thing the fertile queen does is to drink her fill of nectar, and she is then ready to seek her new home.

This is not so easy to find as you might imagine, because she much prefers an old mouse nest, if she can find one. Instinct perhaps aids her in locating a suitable nest, at least she looks for nests in the likely places such as under logs, along fence rows, in meadows, and under brush piles. On finding a nest, she proceeds to organize her new home. First she builds a large cup to hold honey as food on cold days when she cannot fly. Near this she builds a pile of pollen mixed with honey, and in this mass she lays her first eggs. These eggs must be kept warm in order to insure hatching, and the newly-hatched bees must be fed. The

mother queen sits on her eggs and broods her young in much the same manner as the mother bird. Three to four weeks of ardent care is required of the queen before her first worker offspring appear to help with the housekeeping duties. With the aid of a few workers to help provide the colony with food, the old queen seldom needs to leave the nest, and spends her whole time laying eggs and caring for her brood. If the colony prospers perhaps a hundred bees will be reared. Prosperity brings the development of young queens and males. The young queens forage but little, and the males do absolutely nothing to maintain the



Comb of *Bremus vagans*: (a) queen; (b) cocoons; (c) honey pot made of wax and pollen; (d) pollen storage pots, also made of wax and pollen; (e) larval cells.

colony. Their sole function in life appears to be the fertilization of the young queens. After mating the queens crawl a few feet away from the nest, dig themselves four to six inches into the soil, and remain there quietly awaiting the coming of a new season when they in turn will seek to build a home.

The home life of the bumblebee is not all peace and quiet. Their home must be defended at all times from enemies. About 50% of the nests are destroyed from one cause or another. Every nest is attacked by other insects that destroy a part of the young bees.

Once a queen has founded a new home she does not want a rival queen about. There are times when two queens try to occupy the same nest, but generally one will kill the other. Some bumblebee nests become infested with a bumblebee that, like the cowbird, lays her eggs in other bumblebee nests. She will either occupy the nest with the rightful queen, or she may kill the mother queen and force the worker bees to rear her brood for her, instead of rearing the brood of their own mother.

Bumblebees are one of our most beneficial insects, pollinating many of our flowers and plants too large to be pollinated by honeybees and other small insects. They are responsible, largely, for the pollination of one of our agricultural crops, red clover. The value of this crop alone should encourage the protection of these beautiful and beneficial insects. Man has been very destructive to their colonies, but every effort should be made to save the nests by preventing their destruction during the breeding season. In addition, artificial nest boxes can be provided that will be readily occupied by the queens. It is hardly practical to attempt to rear bumblebees as we do honeybees, but their natural encouragement is both practical and worthwhile. The next time you discover a bumblebee's nest, don't destroy it. Rather, prevent its destruction and give these helpful insects an opportunity to be prosperous. On their prosperity depends in part the prosperity of the farmer, the orchardist, the gardener, and the lover of beautiful flowers. Without bumblebees many of our cultivated plants would perish.

—ARJ—

Recreation in New Orleans



Through this avenue of palms may be seen the business district of New Orleans.

WHEN you go to the December meetings of the League, Institute and Inspectors (see Meeting and Events) in New Orleans you will find New Orleans is fast becoming one of the great convention cities of the nation, due, not only to its excellent convention facilities and its attraction as an historical center, but also to its wealth of recreational facilities which is so diversified that the tastes of nearly everyone can be satisfied.

Usually when a convention requests information on what the city can offer in the way of recreation it is more interested in the kind that takes place after the sun has gone down and the bright lights turned on. New Orleans has plenty along this

line, ranging from the honky-tonks in the commercial section of the famed Vieux-Carre to the more elite night-clubs and excellent bars found on the uptown side of Canal street.

But for those who prefer to find their fun in the daytime, or would like to do both, the city has notable advantages throughout the year in the way of sports, both from spectator and participant standpoints, sightseeing and motor tours in the surrounding country.

For the spectator, New Orleans has excellent horse-racing at the Louisiana Jockey Club's Fair Grounds, one of the most beautiful race courses in the country, or attendance at some of the other sports events

that are continually taking place in the city. Boxing and wrestling matches are scheduled weekly and the football extends well into September.

Fishing, of course, is a year round sport here. Either in the immediate vicinity or within easy driving distances are Lake Pontchartrain, numerous small lakes, bayous, Chef Menteur and the Rigolets. These waters abound with fish such as tarpon, redbfish, speckled trout, black bass (called green trout locally), croakers, drum, sheephead, red snappers, flounders, spanish mackerel and blue fish.

Both public parks provide rowing and fishing facilities, in artificially constructed, annually stocked lagoons.

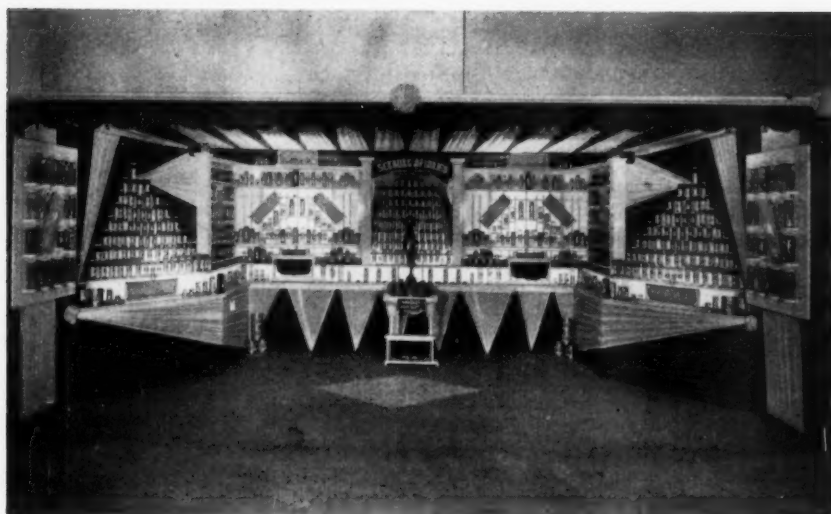
Tours in and about the city introduce the visitor to many new and interesting sights. Within the city itself is the endless novelty and old world charm of the Vieux Carre, the natural beauty of the parks, the hustle and bustle of the river front, the unruffled calm or equally tempestuousness of the lake, the quaintness of the Garden District, the scholarly serenity of the universities and the reverential atmosphere of the many-tombbed cemeteries. But an even broader field awaits the visitor who has time to investigate the surrounding territory.

Most appealing of the short trips is to the West, out the old Spanish trail, to the Evangeline country, with its shady bayous, moss draped oaks, old French settlements and Cajun inhabitants. Other points of interest are the famous Versailles Oaks, finest in the world, the great Mississippi River Bridge and the Bonnet Carre Spillway.



Brulatour Courtyard in New Orleans French quarter.

Prize Exhibit at Florida Fair



THIS exhibit by the Seeburg Apiaries, Manatee, Florida, won first prize at the Florida Fair at Tampa in 1938. It is an unusually

fine display, well prepared, tastefully decorated, and should serve as a good example for others interested in this kind of publicity.

—ABJ—

A Lot of Labor, But Often Worth It



L. R. SEWART, Newport, Indiana, has a neat way of packing. We have tried it. When you pay for labor and materials for a good job it costs from twenty to fifty cents a colony a year, including unpacking in spring. If you supply your own straw and labor and have a grade of paper that will last more than a single season, the cost can be greatly reduced.

One thing sure, it's a comfortable sensation to get when, on a blustery

winter morning, the hives appear comfortable and the bees warm. Early spring breeding is always heavier and bees come faster, even though they may come through winter all right without packing. Location, cost, the percentage of yearly losses, your own individual circumstances,—all enter the decision about whether or not to pack. Guess it's a problem each must decide himself: but on these and other pages of this issue you may find some plan that will help you.

Japanese Pagoda Tree

About a year ago there was a query about the value of the Japanese pagoda tree (*Sophora Japonica*) for bees. In central Europe it is highly recommended as a nectar bearing tree, and in addition, like the black locust, it is a nitrogen gatherer, and this habit should fit very well into a soil restoring program.

Because it is not well known, the Japanese pagoda tree is seldom found except as an ornamental, for which purpose it is not of much value. Its flowers are like those of the black locust in shape and size but the color of the flower is creamy white. The tree resembles the black locust, the only difference for the casual observer being the absence of thorns and the fact that the tree blooms in August.

Here there are two plantings, one of fourteen trees twenty to thirty years old, on a sandy hill about a church, and a second of fifty well grown specimens, maybe twice as old, on deep, black, rich soil near a river in the park of an old estate.

Note the difference of soil and especially the different distance to the surface of subsoil water in these two cases. These two things have a great influence on nectar secretion. The trees on the sand have not had a copious nectar secretion for years, while those in the park secrete more freely. Our experiment station which is situated at the edge of the park reports gains from the trees from scale hives as long as the bloom lasts.

Edw. Kellner,
Czechoslovakia.

—ABJ—

For a Few Colonies



Mr. and Mrs. Luther P. Headly, of Green Village New Jersey, have seventeen colonies and have had bees over forty years. In this picture, the bees are in a long row with straw for packing, open front, and probably the straw itself is protected from the weather by some kind of a covering. This is a simple way for a few colonies. H. A. Dunham,
New Jersey.

A Corrugated Iron Packing Case



IN saving space and for convenience in shading and packing, we group our bees in sets of five. The hive stands are either 8 foot steel posts or 2x4's leveled on six bricks. In packing, it is a simple matter to remove covers and slide the five hives together, fasten the galvanized corrugated iron sheets around them, pour in packing, fasten a sheet on top and shove a little straw under the hives.

We find this quick, easy and safe. The pictures do not have much detail but we will try to prescribe the case. It wintered bees 100 per cent

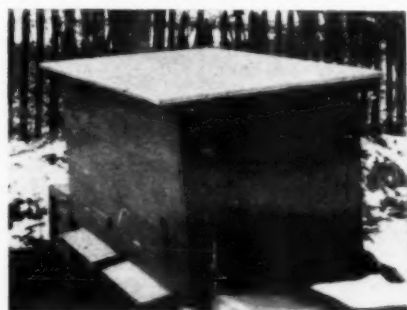
in 1935 and 1936 and the case was made at a cost of 67 cents per colony. It will last ten years with good care, and will bring down the cost per colony for the case to about 6 1/4 cents per colony per year. Since materials have advanced in price, it may cost a little more now. Some labor was, of course, needed in constructing.

The front of each hive is painted a different color to help the bees identify their colony. Five slots are cut 6 inches long and 3/4 inches wide to correspond with the hive entrances in front of the galvanized sheet and about 2 inches from the bottom. A

2 inch wood strip is nailed on as a rest at the front of the bottom board. A similar strip is nailed on each end and on back of sheet to form 2 inch packing space. The two sheets are set up against the hives and two laths are nailed on each end, one at the top and one at the bottom. A piece of tar paper is then nailed on the ends, the packing put in place, a sheet put on top and wired. This completes the case. The sheets on the side are 7 feet long and the top one 8 feet long.

Alfred P. Johnson,
Illinois.

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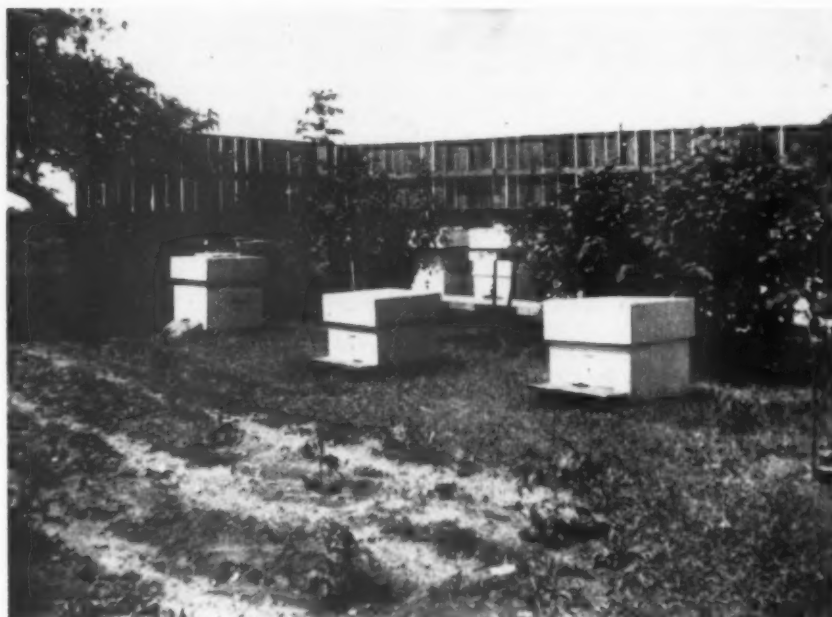


Hives in Packing Case

Here are two Modified Dadant hives in a packing case with a two inch space on the bottom, three inches on the sides and ends, and eight inches on the top. The space is filled with bunches of newspapers. (Mostly about Ethiopia. As I have Italian bees, this makes them warmer.) The hives are put in complete with inner covers and top covers and an extension just above the front entrance. Papers are laid flat on the top covers and in the spring may be easily removed to feed on warm days. We use the Brother Adam feeder.

H. A. Dunham,
New Jersey.

Double Walled Hive and Windbreak



A view in the corner of my home yard with bees in double walled Modified Dadant hives which I made myself. I consider the Modified Dadant double walled hive the best I

have used for honey production and as means of saving labor. The high fence is a windbreak and it does a wonderful job.

Carl E. Chappell, Maine.

All Around the Bee Yard

By G. H. Cale

A queer season. Usually the fall flow in the central river valleys lasts from the 20th of August to about the first of October. The first supers will be put on approximately the 15th of August and the last ones the 15th of September, with an average per colony for ten years of 60 to 70 pounds. The last two years were down, 1936 bringing 35 pounds per colony and 1937, 45. Some of the valleys are better than others.

Nevertheless, the fall flow is usually full of freaks. This year was no exception. On the first of September the flow was fine. On the 10th of September it was all over. That's meant a lot of green honey. Probably sugar syrup will have to be fed to cover up the last honey gathered from the flow so the bees will not suffer from winter dysentery.

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WHAT a season for prices! Small beekeepers have gone haywire. The larger ones may do it. Many small lots of honey, going to market at any price, hurts everybody; but that's the way it is. Somehow the idea got out early that this was to be another 250 million pound year. Nothing like it. Probably won't reach over 200 at the best. Last year was 179 million. The year before that about 145.

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THIS year made many new beekeepers. People who got a crop of honey from a few colonies. One enthusiast sold a hundred sections from a single 10-frame hive. That is too bad. He thinks beekeeping is a gold mine. After a few years of experimenting, with short crops, increasing costs maybe a dose or two of foulbrood, we'll see whether he is a beekeeper or just an enthusiast.

And yet, this is the way beekeepers are made. It's the way new members of any occupation are made. Many come, but few stay.

— o —

ONE state after another adds itself to the list of those that quarantine their borders against the passage of bees on combs. Bees within state lines may be moved from one place to another with sufficient guarantees but not from outside. We don't trust our neighbors any more these days.

Too bad. That means the commercial beekeeper will have to stay in place. "Root, hog, or die" as Mr. Johnson of Rankin, Illinois says. Where does this take us? It should be enough to demand safe guarantees regardless of state lines. The only other excuse for quarantines is to keep home pastures for home folks. It's an odd excuse since honey produced in any state may be sold in any other state without guarantee at all. I predict that a decrease in commercial beekeeping will follow this barrier to profitable locations.

— o —

THERE is something to stock selection. This year we have tried queens from a six year stock selection which has high yield records. The result was remarkable. Some were not above the average. About a baker's dozen were. Five of those were the best. One was the top colony for the entire season, with a total production of over 400 lbs. Of course there are many factors done up in inheritance. We don't know whether something in the condition of the colony at the time of the honeyflow or a factor which we do not suspect may have entered into the records, but since the entire lot were selected for yield, the significance is evident. All of us are still under the impress of the desire to have all colonies in every yard like the very best colony we possess. A long desired goal which has never yet been attained.

— o —

EVERY year we dabble around in queen rearing. One thing seems sure. The best queens are the result of the most natural conditions and the farther we get away from them the poorer the queens. Cells may be started anyway but feeding, growing, emerging, and mating must not only be as nature directs but go nature one better if possible. Any thoughtful man can raise good queens.

— o —

THE next thing is to take the best and make it better. That's the job that nobody is doing much with even now that we have a means of mating queens under control. The greatly to be desired improved bee is still a mythical creature.

A few breeders seem to be experimenting with first crosses. Sometimes they are splendid, particularly heavy breeders, and if selection has been made for honey production as well, the increase in the number of full supers is noticeable; but when they supersede, you may have anything at all. Most beekeepers never know when they have lost the queen they think they have. Why should they? The queen is not marked, clipped, or otherwise identified. All of our queens must be marked in some way so we may know them at sight. Then we will begin to go places in selection.

— o —

THAT comment on markets brings to mind another fact. The cost of beekeeping depends on many things and the price at which honey is sold may or may not be based on cost. The beekeeper with relatively few bees who only gives spare time to honey production, thinks any price at all brings him back a return. His expenses are small after his capital investment is made and he probably will not have much to buy, may raise his own queens and if he has a feed bill, will put it on his grocery account, and forget about it. He will, of course, have to pay for containers or for sections and foundation but his costs are down. Only when he gets where bees bring in a large share of his living, will he see that the costs he used to enjoy are not the ones he now faces.

— o —

THEN he becomes one of those middle class beekeepers who must sell his honey when it is produced in order to get money for shoes, clothes, groceries, light, etc. and he is pretty apt to make a sacrifice if he doesn't have much to sell, even though it doesn't bring back his costs.

— o —

THAT man may in time graduate into the carlot producer and if the market is off he will then sell only enough of his honey to cover current expenses and will save the balance until the market is satisfactory.

— o —

THE larger we get, the more we expend to produce the honey we sell; don't forget that. The beekeeper who reaches the point where he has to hire labor, buy frequent replacements in machinery, trucks, and equipment, must cut close margins. He is forced to get more and more bees until we now have thousand colony beekeeper in the place of the 500 colony beekeeper of a few years ago. It takes that many or more to make a decent living.

The Editor's Answers

Color of Bees

I read of golden Italian bees and leather colored Italian bees. How do these differ from three-banded bees? Are they as good or better, more cross or gentle? What is meant by hybrid bees and wild black bees?

Answer.—Originally, the Italian bees imported from Italy were leather colored which is a self descriptive term. The color of leather varies but the average color is dark brown. Since then, bees have been bred in this country for many generations and there has been developed a bee with three leather colored bands or with three bright yellow bands, also Italians with five yellow bands which are called the goldens. So, when we speak of leather colored, three-banded, and golden Italians, those are simply names describing color variations in the Italian bee. Whether or not one or the other is more gentle depends entirely on the individual strain which you have. There should be cross bees among all of them and also gentle ones.

A hybrid bee is a cross between one race and another; an Italian with a black bee, or a Carniolan with a black bee, would make a hybrid bee. A Caucasian with a Carniolan would also make a hybrid bee. The black bee so called was common in the East years ago but, of course, came originally from Europe, probably central Europe. It had no color other than that which was given to it by the body hairs which, in the younger bees, made them look somewhat gray. The older bees were decidedly small and black. They were not necessarily cross. They capped their honey white but they were quite susceptible to European foulbrood and so the American beekeeper has now practically entirely gotten rid of them.

—ABJ—

Safe Introduction

It is said that a safe method of introducing queens is to make a nucleus of young bees. Will a nucleus of five Langstroth combs well covered with young bees and about a pint of other bees be all right? How many days before I can unite the nucleus with the old colony after killing the queen in the old colony so that I will not lose the new queen in the nucleus?

VERMONT.

Answer.—It is the old field bees that cause the most trouble with queen introduction, so for safest introduction, have young bees. If you put a new queen on the bare comb of sealed brood and the weather is warm enough, the young bees will emerge and you will have no difficulty with the queen. When you introduce the queen to a nucleus of four or five combs of bees, you still have danger in introduction. When the nucleus is made from a colony and put in a new place, the old bees return to the parent hive and the queen then may be safely introduced to the younger bees which will now be predominant in the nucleus.

In re-uniting the nucleus to the parent colony, after the new queen has been accepted by the nucleus, it would be better to make the old colony queenless twenty-four hours before the union is made.

Honey Rim in Modified Dadant Brood Frame

I have heard it claimed that all deep frames like the Jumbo and Modified Dadant will cause a rim of honey to be stored above the brood and that rim of honey will keep the bees from going into the supers when the honeyflow begins. It is claimed that the small hive does not have this troublesome rim of honey and so can be kept under control. Please give me your opinion.

SOUTH DAKOTA.

Answer. This claim is silly. A good queen in the spring of the year will lay enough eggs so that any rim of honey left from winter will rapidly be used as food when the flow starts, the bees will readily go above into the supers and there is no difficulty. On the other hand, when the season closes in the fall, the queen reduces her laying. The empty spaces in the brood combs in the large hive at the ends and top of the combs are usually filled with honey, making a perfect winter brood nest. As a matter of fact, the Modified Dadant hive, as a brood nest and a food chamber, is as automatic in its operation as any hive now used. This cannot be said of smaller hives.

—ABJ—

Disinfecting Solution

Please suggest a solution to disinfect combs from colonies showing disease. I hate to destroy these perfect combs. I have read of the chlorine or formalin treatment. The brood combs from colonies having disease have been destroyed, but I have about three hundred bodies and combs which could be treated in the winter.

INDIANA.

Answer.—There is no thoroughly safe treatment for combs which have been exposed to disease or which have contained larvae infected with American foulbrood. Numerous solutions have been tried but none of them have yielded satisfactory results.

We burn anything which has been infected. This is the only safe method which has been found. Hive bodies, bottom boards, inner covers and covers do not have to be burned but they may be scorched with a blow torch which serves to destroy the infected material.

—ABJ—

Ants in the Bee Yard

We are bothered here by ants in the hive and would like to know what to do to get rid of them. Will appreciate your suggestions.

MINNESOTA.

Answer.—Ants are common in all apiaries, but there are several kinds. Some ants enter the wood, destroy the hives in time. These are termites or white ants. The only way to prevent them is to treat the bottom boards and hive stands with creosote or some wood preserving preparation. We have used tar paint, but it is only partially satisfactory. Creosote is better. When the bottom boards are soaked in creosote, they must be aired for a long time before they

are put on the hives, otherwise they are a bother to the bees afterwards.

There are ants often found on the top of the beehive when the cover is removed. Usually it is a little brown ant, *Microgaster*, which is not bothersome. They sometimes bother the beekeeper as they can bite, but since they do not bother the bees, we do not consider them any trouble. Occasionally the large black ant which is also a severe biter builds nests at the top of the beehive, but since they do not trouble the colony, they are not considered of any particular importance.

In the South, there is a red ant or Argentine ant, which attacks the colony itself. The colony must be set upon a platform or hive stand, the legs of which are in cups of oil made by a metal container or on a greased circle of paper, metal, or other material large enough to keep the ants from reaching the hive.

—ABJ—

Killing The Bees In Fall

I am beginning to think that killing bees in the fall and buying packages in the spring may not be such a bad experiment. I will try it. What do you think about it?

WISCONSIN.

Answer.—We have never tried wholesale killing of bees in the fall and refurnishing with packages in the spring on a cost basis. We have always felt that it was best to winter the strong colonies and to remove the poorer and indifferent ones, filling up the empty equipment in the spring with packages. That works well.

Some beekeepers, however, will argue for the disposal of all the bees in the fall. The question we have always been unable to answer is whether such a method has in it the possibilities of returning to the beekeeper the cost of the package, together with a balance of crop equal to that furnished by the bees which are carried through the winter in the usual way. Some claim that they are able to reduce the operating cost enough to return the cost of the package when added to the extra honey secured from the extracting full combs of honey from the brood nest the previous fall. We have no figures, however, on this at the present time.

—ABJ—

Fumigating

I have some combs with honey in them that I want to hive a swarm on. These combs are from a weak colony of bees and are badly infested with wax moths. Could I use Cyanogas on these combs before putting them in the hives, or would you advise using sulphur? I have all new hives and could stack them up three or four high. How long should I wait after treating the combs before putting the bees on them?

MINNESOTA.

Answer.—In using Cyanogas, a teaspoonful to one hive body is sufficient with fresh gas. Cyanogas, when purchased fresh, has a bluish gray color. After the gas entirely escaped, the remaining material is a reddish-brown and is not of any further value.

Gas may be placed under or above the combs; it makes no difference. When using it be careful not to inhale the gas in quantities as it may be fatal. Directions are usually to be found on the can.

Before the bees are hived on the treated combs, they should be exposed to the air for two or three days, otherwise they will kill the bees put on them.

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Meetings and Events

Institute Items.

When the American Dietetics Association meets in Milwaukee, Wisconsin on October 10-14, two interesting trips will be taken. One will be to Rochester, Minnesota to visit the Mayo Clinic and the other to Madison, Wisconsin. At the noon luncheon to be served at the Memorial Union in Madison, Wisconsin's Best Foods will be featured. These best foods are: milk, honey, cheese, and cherries. Honey will be served with hot muffins. The members and their guests will find at their places a miniature bottle of milk, one of honey, a sample of cheese and a small loaf of Honey Crust Bread.

— o —

The American Public Health Convention is to be held in Kansas City, Mo., October 24-28. Mrs. Winefred Loggans will be in charge of Kellogg's booth and has arranged to exhibit honey in connection with their cereals and to distribute a new leaflet.

— o —

Mrs. Harriet M. Grace is to appear on the Homemakers' Hour over Wisconsin stations WHA-WLBL from 10:30 to 10:42 on Thursday morning, September 15. Her subject is "The Prudent Homemaker Uses Honey." Copies of this broadcast may be had by writing to the Institute.

— o —

Entries from the various parts of the United States are being received daily for the Cookery Contest. Members of the Advisory Committee have kindly consented to act as judges.

During the first ten days of September the Institute received many requests from Home Demonstration Agents, Home Economics Instructors, and others interested in foods. Among other requests were those for Honey Candy and Honey Popcorn from a commercial concern, from bakers who are following in the steps of those who are making bakery goods better by using honey, from gas and electric companies for our literature and recipes, from an eastern broadcasting station for material on honey, for suggestions for window displays, for fair exhibits, from bottling works, from a large church for the names of companies that make pure beeswax candles, from a soft drink concern, from soda fountains and from a state institution the question came "Where can I buy a large supply of honey?"

The Chicago Northwestern Railroad Company will feature honey in their dining cars during Honey Harvest Week, October 24-29.

— o —

J. R. Bradshaw and Sons of Wendell, Idaho is to sponsor a \$1500 radio program for honey.

— o —

During the last few months the Institute has filled requests for literature from people in Canada, India, Japan, South Africa, Trinidad, Venezuela, New South Wales, Porto Rico, Mexico, Germany, and British Guiana.

— o —

Requests for 45,000 copies of Contest Rules have been received and sent out gratis. Many requests have been coming in for the Honey Harvest Week Streamers that are also sent gratis.

— o —

Honey Harvest Week—October 24-29

Don't forget—American Honey Institute and cooperating state and federal agencies, commercial organizations, and many individual firms are uniting to make Honey Harvest Week YOUR GREAT SALES PERIOD. If you do your part honey will move quickly. Plan a local sales tie-up. Get suggestions, folders, and other material to help you from the Institute. Address American Honey Institute, Madison, Wisconsin. Whether you are a member of the Institute or not makes no difference. Do your part. You'll have to start right now. Get after your grocer's window for a display, use the bank window. Get a story in your paper. Paint the town with honey. Remember the dates, October 24-29—Honey Harvest Week.

— o —

American Honey Producers' League, December 5, 6, 7.

Outline of the program timing for the New Orleans meeting of the League and affiliated bodies, to be held in the Roosevelt Hotel, December 5, 6, 7.

Monday, December 5, American Honey Producers' League Day. 8:00 A. M.—Registration. 10:00 A. M.—Opening meeting. Address of welcome and response. 1:30 to 5:00 P. M.—League meeting. Sight seeing tours arranged—time to be named later.

Tuesday, December 6, American Honey Institute Day. 8:00 A. M. to

3:00 P. M.—Program arrangements to be made by the Institute. Sight seeing tours during the day. 7:00 P. M.—Banquet—no speeches—all fun.

Wednesday, December 7, Apiary Inspectors of America Day. 8:00 A. M. to 12:00 M.—Program arrangements to be made by Inspectors. 1:30 to 5:00 P. M. General meeting. 7:00 P. M.—Real Louisiana French Crab Boil. Sight seeing tours during the day.

Hotel rates for this convention are \$3.50 for single and \$4.50 for double.

— o —

**Southern Conference to Consider
New Marketing Agreement—at
Charleston, November 28,
29 and 30, 1938.**

As the Secretary of Agriculture signed a new Bee Marketing Agreement September 2, to be effective September 6, it is now up to the queen and package shippers to make it work to the advantage of all concerned. The new Agreement contains recommendations as suggested at the hearing in New Orleans last December. Although it does not contain all the regulations wanted by a number of shippers, it is the best Agreement that could be obtained at that time.

Some think it will not be workable, while others think it better than the old Agreement in many ways. In the final analysis, the effort put forth to make it successful by those affected will decide the value of the new Agreement.

As the Southern Conference is the official shippers organization, there will be necessary time allotted for a thorough discussion of the new agreement at the Charleston meeting, November 28, 29, 30. All queen breeders and package shippers are requested to attend.

The following is a list of the executives from their respective state: G. W. Bohne, La., Roy Weaver, Texas, J. W. Ricer, Okla., Leslie Wedgeworth, Arizona, Homer W. Richards, Ark., Jasper Knight, Ala., N. C. Jensen, Miss., L. M. Lewis, Fla., E. H. Ezell, S. C., P. G. Craddock, N. C., H. W. Weatherford, Va., G. M. Bently, Tenn., J. G. Rossman, Ga.

All executives are asked to contact as many of their bee shippers and honey producers as possible and urge them to attend the Charleston meeting. Any executive, who finds he can not attend the Charleston meeting, is asked to secure an alternate who will attend and represent his state. The Southern Conference is anxious to have every Southern state represented.

Our good friends A. C. Lundin, A. D. Hiatt and Ned Prevost, who compose the program committee, have promised us so much in the way of

entertainment at Charleston, we are all anxious for November 28 to come. There are museums, parks, beautiful gardens, churches, old buildings, ship yards and many historical places to visit. We are also promised a banquet, a boat trip, floor show, with G. W. Bohne acting as judge, and last but not least, a mysterious midnight meeting of the Ancient Order of Flea Hoppers, with A. D. Hiatt acting as Grand Wizer.

A. V. Dowling, Secretary,
Southern Conference.

— o —

Did You Know . . . ?

That the first apartment house to be built in this country was constructed in Charleston, South Carolina, in 1800? The Southern Beekeeping States' Federation, which meets in this historic city November 28, 29, and 30, will have an opportunity not only to see some historic apartment houses but many other points of interest.

That the first prescription drug store in America began operation in Charleston in 1780? That the Charleston Chamber of Commerce was the first city chamber of commerce in this country? It was organized in 1773.

That Charleston is a city every American should see? That fifty-two battles have been fought in the vicinity of Charleston since the city was founded?

(Let's Go;—Ed)

— o —

Missouri Plans Meeting, October 25

Beekeepers met at Sedalia during the State Fair in August to arrange for a meeting in Columbia, Farmers' Week, Room 100, Whidden Hall, at 1 P. M., October 25th, and continuing Wednesday. The main issue will be the framing of an inspection law which will meet with approval. Since the beekeepers themselves are the ones to be affected by such a law it is up to them to be there and help. F. B. Paddock of Ames will discuss "Educational Extension Work in Correlation with Inspection." Few appreciate a truck load of bees, with AFB, set down next door and that is happening to some of our better beekeepers. So, it's your meeting. Come and help.

Reed Bailey, Secretary
Missouri Apicultural Society
and State Beekeepers Ass'n

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Oklahoma at Muskogee, October 5

Oklahoma Beekeepers will meet October 5 at Muskogee to organize a State Association for educational purposes. It is a good time as the state has an unusually good crop, the total to exceed one and a half million pounds. The meeting is called by the Northeastern Oklahoma Beekeepers'

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Association. Speakers J. C. Scott, President of the State Board of Agriculture; Dr. Henry G. Bennett, President of the Oklahoma Agricultural and Mechanical College; A. H. Parks, Secretary of the Texas Beekeepers' Association; and A. B. Harris, Secretary of the Eastern Oklahoma Beekeepers' Association.

The Bee Inspector and the beekeepers are launching a program to free Oklahoma from foulbrood. Oklahoma runs low in honey production principally because of disease areas. Some of the best pasture in the state are so highly infected that a large part of the bees have died.

Some very fine honey has been produced this year in the clover and alfalfa sections. There is a fair yield of good cotton honey. Hairy vetch is also becoming a promising crop for early nectar just before sweet clover.

J. M. Goin, Chief Inspector,
Bee Bureau, State Board
of Agriculture.

— o —

Georgia-Florida Joint Meeting, Valdosta, October 26, 27.

The Program Committee of the Florida and Georgia State Beekeeping Associations met last week at Gainesville, Florida and completed plans for their joint State meeting, to be held at Valdosta, Ga., October 26 and 27.

The following is an outline of the program.

October 26—The meeting opens at 9 o'clock, with Georgia's President, J. W. Cash, presiding, and continues until 5:30. At 6 o'clock the beekeepers will go to Pikes Pond, 10 miles south of Valdosta, for a supper given by the Georgia beekeepers in honor of the Florida beekeepers. Music will be furnished by a five piece string band during supper. Preceding the supper, the Georgia ladies will entertain the Florida ladies during the afternoon.

October 27—The meeting opens with the Florida President, L. M. Dewey, presiding, and continuous till 5:30. From 7:45 to 10:00 there will be an entertainment with moving pictures by J. D. Haynie, Florida, and Milledge Murphey, Georgia. Also, at this time prominent out of state beekeepers will make interesting talks. Among these are E. S. Prevost, S. C., F. W. Muth, Ohio, and representatives of the Dadant and Root Companies.

The following is a list of speakers on the Florida program: L. M. Rhodes, J. D. Haynie, Dr. Creighton, Hon. N. Mayo, L. M. Dewey, H. S. Foster, R. D. Shuping, R. C. Allen, R. E. Foster, Dr. Walter Horten, W. Newell, Dr. Montgomery. The Florida Ladies Auxiliary, with Mrs. R. W. House, President, will have an interesting part on the program.

The following is a list of speakers on Georgia's program: J. W. Cash, J. D. Ashley, M. S. Yeomans, G. Sadler, C. H. Bishop, W. B. Bradley, J. J. Wilder, A. V. Dowling, G. G. Puett, M. S. Fortune, A. J. Reamy, Morley Pettit, Alan Eby, Mr. Maddox of Bainbridge.

Out of state beekeepers are invited to attend, especially beekeepers from our neighboring states of North Carolina, South Carolina, Tennessee and Alabama.

J. G. Rossman

C. H. Herndon

A. V. Dowling

—Program Committee.

— o —

New Zealand Calls for Honey Samples

H. R. Busch, Secretary of the Canterbury Beekeepers' Service, Hornby, Canterbury, New Zealand, is preparing a display of world honeys at the New Zealand annual meeting early next year. He would like samples of representative honey from the United States. Please co-operate with him. Send samples of half or one pound size directly to his address.

— o —

Wisconsin Ladies Score Again

Nobody went hungry this year at the Wisconsin State Fair for want of something tasty, different and not expensive. The Ladies Auxiliary of the Wisconsin Association under the direction of Mrs. A. J. Schultz, of Ripon, fed many Fair visitors who came to the bee and honey building. There was a large booth with all modern equipment. Mrs. Schultz demonstrated the honey way to make honey meringue. Her voice reached to the farthest corner of the building by means of a loud speaker system, allowing visitors to hear the many possibilities of using honey, even though they might not be in the immediate vicinity of the demonstration.

Around mealtime the ladies were kept busy preparing honey baked ham sandwiches, dream bars, banana cake and honey cup cakes. The ham sandwiches and the dream bars were on hand at all times. As fast as the other honey baked goods were taken from the oven they were sold.

For many years a honey banquet has been held at the bee and honey building. This year the exhibitors gave the banquet in honor of Mr. and Mrs. Kleeber of Reedsburg who have exhibited at the Fair for fifty years. A plate lunch was furnished by the ladies to about fifty people.

Millie Francis, Wisconsin.

— o —

Ford-Iroquois-Kankakee (Ill.)

This three county meeting at Watseka July 27 marked the end of one of the first big crops in this part

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Citronelle, Ala.

of Illinois for several years. There were about thirty in attendance at this meeting.

Points: Pastured and clipped sweet clover along highways still blooming. A record crop. Inspector Killion made his initial appearance and reports nine per cent disease so far this year.

— o —

Licking County, Ohio.

The Licking County beekeepers held their annual picnic on August 16, with two hundred present. Speakers were Charles Reese; Prof. Dunham; H. A. Albyn, of The A. I. Root Company; Glen Kapp, of Sears, Roebuck & Company; Fred Muth, of Cincinnati; and Lloyd C. Gardner, president of the Ohio Association.

— o —

Delta Meetings.

The Delta (Miss.) Association met in Vicksburg, July 4 and everybody in that town is still talking about bees and honey. Good advertisement. The picnic was in Hummels Grove. A feature was the "bee fite" in which three men transferred a hive of black bees from a box hive into a modern hive. All three contestants were in a wire enclosure nine feet square, so that spectators could come up close. The bee fite was followed by an old fashioned barbecue lunch, a fiddler's contest, a dance, and other interesting contests. A plan like this sure keeps the town folks talking and everybody turns out.

The main item of interest in the August 1 meeting of the Association was the starting of a nursery of trees and shrubs from which stock will be given to those who will plant them. All nursery stock will be honey plants. We do not hope to increase the honey plants, but it will help to keep up the interest in bees and honey. This project should be under way by October 1, and in the spring we hope to have a modest supply of seedlings and young trees.

The next move will be to induce farmers to plant honey plants for hay and cover crops, requiring the cooperation of the county agent and the agricultural teachers and the farmers too. The August meeting was at Mr. Hennington's at Vicksburg.

Reported by A. B. Lozier.

(This is one of the most interesting meeting reports we have ever received. If every association would start projects like this, what a great help it would be. We commend other secretaries to follow the example of the Mississippi Association.—Ed.)

— o —

Mississippi Officers.

At the meeting at State College July 27, fifty members were present. M. S. Fortune of the Stover Apiaries at Mayhew was elected president and Clay Lyle, of State College, secretary.

JOSEPH DUSEK COMPANY

726 WEST RANDOLPH STREET, CHICAGO.

HONEY WANTED ALL GRADES COMB AND EXTRACTED

Any Quantity.

(Reference, First National Bank)

QUEENS

Wise beekeepers, do not keep poor queens, but plan to requeen now with Merrill's Italians.

Prices (untested Italian queens) 1 to 10, 50c ea.; 10 to 50 40c ea.; 100 or more 35c ea.

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Queens while they last 50c each. Booking orders for packages for spring delivery.

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BEEKEEPERS in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers.

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Manufacturers of a complete line of Honey Extractors, one for every requirement. Send for printed matter.

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QUEENS 50c

Our queen yard will continue to operate all summer, producing the best queens of the season. May we have your order.

ROSSMAN & LONG
P. O. Box 133 Moultrie, Ga.

Crop and Market Report

Compiled by M. G. Dadant

For our October Crop and Market Page, we asked reporters to answer the following questions:

1. How is honey selling?
2. What are large buyers offering?
3. How is the crop since last report?
4. Where ought prices be compared to a year ago?
5. Please read crop price page and give us suggestions for any changes for October number.

How is Honey Selling?

In practically all sections, honey is selling fairly well to good and by the time this reaches our readers, should be selling good to excellent in all parts of the United States. The slow sale has likely mostly been caused by the warm weather of late August and early September. The shortage of fruit crop in most sections undoubtedly will mean a better sale for honey. The sorghum crop seems to be a little short of 1937 also which should be of some benefit.

Sections reporting the best sales are by coincidence the same sections which are reporting a heavy crop this year. Namely the Central West. However, along the Atlantic seaboard, we also find good sales in a retail way for honey.

Buyers Offering

In the entire western area including California and the intermountain territory, buyers do not seem to be in a position to make many offers. As a matter of fact, the best that is reported is that buyers are indicating how low the market really is without any desire to make purchases.

In the Central West, considerable honey was sold earlier at a price of about 5½ cents, cans furnished by the packer. Since then, the price has gone down somewhat and as low as 4½ cents, cans furnished, is being offered. On the other hand some of the ordinary outlets are buying their honey without any question and slightly below last year's prices. This refers to the small packer and particularly the wholesale grocer and bakery.

Late Crop

The late crop has been perhaps a disappointment although not a great deal was expected of it in view of the drought in many sections.

New York and Pennsylvania reporting a good crop of buckwheat and southern Indiana and Ohio and extending down the Ohio Valley and along the lower Mississippi a most excellent crop of the shoestring vine and wild cucumber in connection with other fall flowers.

Most of the fall areas however, bordering the upper Mississippi Valley and the fall crop sections generally report a very mediocre crop this year, very much less than a year ago. What fall honey there is of an amber grade will not be sufficient to make any flurry in the already disturbed market.

In the sweet clover section as indicated in our last

letter, the late flows have been disappointing and in some sections of the intermountain territory and northern United States, frosts have already come, which have ended the flow.

Prices Compared to 1937

In most sections, the retail price generally is being held by beekeepers although as we go to press, we learn of a few sections in which cut price wars have already been instituted.

As a general rule, the wholesale market seems to be about ½ cent to 1 cent per pound less than a year ago with, of course, the packers' and jobbers' market considerably lower than this, in fact lower than there is any reason for in view of the crop.

Late reports from the intermountain territory will indicate that the crop is not a bit in excess of last year and perhaps considerably less, whereas Nevada and the California coast reports very much shorter crops than in 1937. As stated in our previous report, also, the southeastern states with the exception of Georgia and perhaps Florida, are far short of a year ago and undoubtedly are already clamoring for more of the native honeys.

The bulk of the prices just coming to us for our price page this month are in the nature of correction. In a few instances the retail prices are indicated as being too low and in several instances the jobbing price on carloads has been too high. We have made a few corrections on this account but as a general rule, believe that the prices as given in the September issue can be fairly well used as a standard, bearing in mind the local conditions. As stated previously, there is a total crop this year indicated of perhaps 15 per cent more than 1937 which in itself is not a great excess. The difficulty has come, however, that the big crop occurred in the central western and Mississippi Valley areas and as a consequence there has been apparently a glut on the market.

The writer has maintained in previous years that California conditions largely set the mark for early sales of honey and perhaps set the market for the season. This most certainly did not hold true this year as many California reporters indicate that they should have at least the equal of last year whereas the central western reflux of honey has resulted at least a much less being offered at the date this is being published.

We rather look for an amelioration of the present conditions and the possibility that the market will advance to a fairly satisfactory figure although in a jobbing way, at least, one-half cent below 1937.

The ultimate outcome will be dependent entirely upon foreign and internal conditions, both political and economic. With improving conditions in this country, no doubt the 1938 crop would be disposed of satisfactorily at no great change in price over 1937.

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Reference: First National Bank of Chicago

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEEES AND QUEENS

MACK'S QUEENS—They speak for themselves. Herman McConnell, Robinson, Ill.

READY TO BOOK your orders for 1939 Carniolan and Caucasian queens and package bees from imported breeders. Tillery Brothers, Greenville, Ala., Rt. 4, Box 132.

LONG-TONGUED Caucasian Bees and Queens. Gentle, prolific, hardy. Better honey gatherers, winter better. Queens 50c each. 15% discount to dealers. P. B. Skinner Bee Co., Greenville, Ala.

GOLDEN QUEENS, excellent quality that produce hardy, gentle workers, personally reared. Untested 50c. Health certificate. Satisfaction guaranteed. O. E. Brown, Route 1, Asheboro, N. C.

FOR A GOOD HONEY CROP try our Three-Banded Italians. Alamance Bee Company, Graham, N. C.

GOLDEN ITALIAN QUEENS of fine quality. Select untested 50c each. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. C.

MILLER BROTHERS, Three Rivers, Texas. Only exclusive Caucasian breeders west of the Mississippi. Packages with queens introduced.

EXTRA YELLOW Italian Queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested \$1.00. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

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HONEY FOR SALE—We buy and sell all kinds, carloads and less. The John G. Paton Company Inc. 630 Fifth Avenue, New York, N. Y.

WHITE CLOVER extracted 7½c, or 7c ten case lots. Dark buckwheat, cans or kegs, 5c. Light amber goldenrod 6c. A. J. Wilson, Hammond, N. Y.

CHOICE CLOVER and raspberry-basswood honey in 5-lbs. and 60's. Prices on request. F. L. Barber, Lowville, N. Y.

FOR SALE—Fine grade of white, sweet clover honey, in 60 lb. cans, two cans to case, 7c per lb. f. o. b. Dunlap, Iowa; 5 cases or more, \$8.00 per case. For larger quantities write for prices. Sample 10c. E. S. Miles & Son, Dunlap, Iowa.

NEW WHITE CLOVER COMB, 12 to 16 oz., 24 sections \$3.00. Clarence Engle, Kearneysville, W. Va.

SWEET CLOVER HONEY, excellent body and color, ready for the table, seven cents in sixties. E. M. Cole, Audubon, Iowa.

EXCELLENT quality heavy fancy white clover comb, \$3.50 case; fancy, \$3.25; No. 1, \$3.00; fancy amber, \$3.00; fancy buckwheat, \$2.75; white clover extracted, 7½c; amber, 7c; fine flavored buckwheat, 5½c. C. B. Howard, Geneva, N. Y.

NEW CROP buckwheat comb honey, No. 1 and heavy grades, Noel J. Loucks, Springboro, Pa.

EXTRA WHITE well ripened extracted in 60's, 7½c. Light amber, 6½c. No. 1 white comb, per case \$3.50; No. 2, \$2.75. F. J. Smith, Castalia, Ohio.

FOR SALE—Delicious water-white sweet clover honey in 60-lb. cans. Any quantity. M. W. Thompson, Toronto, S. Dak.

NEVADA ALFALFA SWEET CLOVER HONEY. C. E. Andrews, Fallon, Nevada.

CHOICE NEW CLOVER HONEY in 60's and in 5 and 10 lb. pails. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

WHITE CLOVER—choicest of all honey. Samples free. Henry Stewart, Prophetstown, Illinois.

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ORANGE, Palmetto and Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

WE BUY AND SELL ALL KINDS COMB AND EXTRACTED, CARLOADS AND LESS. H. BLITZ, P. O. BOX 3452, PHILADELPHIA, PA.

FANCY TUPELO and Light Amber Honey for sale. Barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

CHOICE Michigan Clover Honey. New 60's. David Running, Fillion, Michigan.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

HONEY PACKERS—Write us for prices on carload lots of California and Western honeys. We stock all varieties. HAMILTON & COMPANY, 108 West Sixth St., Los Angeles, California.

FOR SALE—Fancy, well ripened, white sweet clover honey in 60-lb. cans. Extra good quality. Dadant & Sons, Hamilton, Ill.

FOR SALE—Honey by the carload. Imperial Valley Beekeepers Association, 847 Heber Avenue, Calexico, California.

COMB No. 1, to fancy weight \$3.50 per case. Nice clover extracted in 60's, 7½c. For price in fifty case or can lots write, H. G. Quirin, Bellevue, Ohio.

200 CASES white clover comb honey; also extracted. Carl Schweinhagen, Rt. No. 3, Defiance, Ohio.

NEW CROP Extracted. Write for samples and price. H. E. Nichols, Owasa, Iowa.

COMB AND EXTRACTED HONEY; 75 eight frame hives and equipment. Chester Keister, Clarno, Wis.

HOWDY'S HONEY—Fine quality white, clover, also buckwheat and light amber mixed, extracted in new sixties. White, clover Honey Hunks. Howard Potter, Ithaca, Mich.

BEST QUALITY white extracted honey in new sixties. Case or carload. Satisfaction guaranteed. Ask for samples and prices. Harry C. Kirk, Armstrong, Iowa.

FOR SALE—Extracted honey in 60-lb. cans. Henry Hettel, Marine, Ill.

BEST CLOVER in new 60's, 7½c. E. S. Miller, Valparaiso, Indiana.

WHOLESALE, white comb honey and amber white extracted and amber chunk comb in pails. N. B. Querin, Bellevue, Ohio.

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WHITE CLOVER COMB \$3.50. Honey in every available package. Beekeeper's supplies. Catalogue. Lund's Apiaries, Erie, Pa.

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WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—White and Amber Extracted Honey, any quantity; also beeswax. Write THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE

NEW 2 FRAME reversible extractors at the price of used machines. Welded construction, cannot be beat, free literature. Walter T. Kelley Co., Paducah, Ky.

SINGLE COLONIES, or 60 with best location in northwestern Indiana. Strong, Italian stock, good hives, guaranteed no disease. E. S. Miller, Valparaiso, Indiana.

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YOUNG MAN with universal beekeeping experience, honey production, queen-rearing, etc., desires position as manager. Had experience with 2000-3000 colonies in the clover belt and the deep South. Intelligent and efficient. Write to American Bee Journal.

WANTED—An experienced, dependable bee-man to finish extracting and apiary work. State age, wages, etc., with reference. George Reints, Lindenwood, Ill.

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TRADE FOR BEES, 155 acres \$1200 equity. \$650 mortgage. School, mail routes, springs, seven room house, fruit, timber, hill, bottom land. Edward Winnow, Calhoun City, Miss.

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DADANT'S WIRED FOUNDATION. Overstocked. Write for special prices. Edw. Klein, Gurnee, Ill.

HONEY DISPLAYED with straw beehive sells faster. Photos free. G. Korn, Berrien Springs, Mich.

YOUR WAX WORKED into medium brood foundation 15c pound; thin super 22c. Fred Peterson, Alden, Iowa.

PORTER BEE ESCAPES save honey, money, avoid stings; faster, most efficient. R. & E. C. Porter, Lewistown, Ill.

14 lbs to gall
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WRITE FOR CATALOGUE. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

ATTRACTIVE PRICES on bee supplies and comb foundation. Send for catalog. Saves you money. THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE—Queen mailing cages. Material, workmanship and service all guaranteed. Write for quantity prices. Hamilton Bee Supply Co., Almont, Mich.

\$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers milling thousands of pounds of comb foundation and hundreds of thousands of board feet of lumber into beehives annually. Quality at Low Cost is our motto. Free catalogue. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, \$1.00; two years, \$1.50. Sample, 3c stamp. The Beekeepers Item, San Antonio, Texas.

MISCELLANEOUS

PLANS FOR POULTRY HOUSES—All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

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CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Mich.

BEEGONE Takes Off Honey. Pint sample 40c prepaid. Honey House, Adrian, Mich.

Quality

We often hear the cry; "Overproduction! Cheap prices!" But is there ever an overproduction of a good product? If we go to the store and pay a first class price for eggs we expect good eggs; yet many beekeepers throw their product into containers any kind of way and color and then wonder why business is dull. From the customer's viewpoint if we see a dark, inferior grade of honey in jars, we think the packer must be a novice, or if he has been in business a long time he must be slipping. Put the brightest honey in jars, take the most perfect comb, and if we can grade our honey uniformly in both jars and pails at all times the customer will not be confused as to color or quality. But take the honey of almost any packer and look at the variations. One would think the bees were drunk the days they gathered it! Is it worth the few cents the packers and producers think they are making?

C. H. Huey,
Georgia.

Honey Harvest Week October 24 to 29

May we have a line from you telling us what you are doing to help make this a **BANNER HONEY WEEK?**

Are you among the many who are helping build by December 31st our \$2000.00 Reserve Fund?

Send in your membership now—New or Renewal!

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AMERICAN HONEY INSTITUTE,
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Enclosed find my membership of \$ _____

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The Postscript

Gossip About the Office in the Making of the Magazine

We think of English beekeeping as a small business in contrast to our American tendency toward large scale specialization. It seems very probable that we underestimate the extent of the honey producing industry in Europe. In the August "Better Beekeeping" A. W. Gale, of Marlborough, England, reports that he manages 1300 colonies of bees, an orchard of 5000 apple trees and a dairy of 60 cows. That ought to provide enough work to satisfy even the most ambitious American.

—ABJ—

E. M. Cole, of Audubon, Iowa, questions my report of honey from partridge pea in the September Postscript. He says that his bees were on it from first to last of bloom but never a sign of nectar in their honey sacs. Always they were getting pollen and never more than a pinhead of very light honey.

This agrees with my own observation for I have never known the bees to get anything but pollen from partridge pea in this locality. There are, however, too many reports of surplus honey from this source to question that it sometimes yields something worth while.

—ABJ—

Cole also reports a bee gathering pollen from foxtail which is the first time I remember of hearing such a report. Bees may be expected to collect pollen from almost any plant when the usual sources are lacking.

—ABJ—

An interesting comment on the honey sources of Mexico comes from Pedro Provencal who states that the crop in Michoacan comes from December to April first. He remarks that in September the morning sun is bright in a cloudless sky until afternoon when rain falls. At the end of that month there is less rain and more flowers and they begin what corresponds to our spring preparation for the coming season.

—ABJ—

Our new planting of Zofka red clover looks very promising at this writing. There is a good stand over most of the plot and the plants are thrifty, some knee-high. Because of dry weather in late June and July there was little first year bloom, so there will be very little if any seed this year. We are hoping for a crop next year and for a chance to do some selecting and crossing of individual plants which make the best showing.

—ABJ—

In years gone by there has been much discussion in the bee press of the Rocky Mountain bee plant and the spider flower. There is another cleome native to Nebraska and the southwest, *Cleome lutea*, which has been of unusual interest in our test plots this season. The plant grows to a height of six to eight feet with spreading branches and bright yellow flowers. Like others of the group it is very attractive to the bees which begin swarming over it very early in the morning. The large number of bees visiting a few plants indicate an abundant store of nectar.

—ABJ—

In some foreign bee papers we see references to celluloid combs which are said to be manufactured in this country. I would like very much to see samples of such combs if any such are available. I have never seen them nor do I know anyone who can give me any information concerning them. It is a little surprising that they should be so much better known abroad than in the country of their origin.

For some unexplained reason the yellow flowered cleome has not come into common use in gardens as have the others. In my opinion it is a more attractive plant and the bees seem to like it better if we are to judge by the number visiting the flowers in adjoining rows. There are still many attractive native plants which will provide new material for our flower gardens.

—ABJ—

From the Bee Kingdom, published in Egypt, we learn that at the medical clinic at the University of Munich bee venom is now available to rheumatic patients in the form of a salve. Thus instead of submitting to the stinging the patient simply rubs the salve over the affected surface. This certainly must be a more comfortable way to apply the remedy whether or not it is equally effective.

The preparation is placed in the market under the name "Forapin," but we have not heard of it being offered in this country.

—ABJ—

The American Honey Institute seems to have been the forerunner of numerous similar attempts to popularize agricultural products through the medium of education. The Apple Institute is already familiar to our readers being under direction of Dr. H. E. Barnard who started the Honey Institute on its way. The latest in the field is the "American Herbal and Botanical Institute," 188 West Randolph Street, Chicago, organized to promote the increased use of green vegetables, herbs and fruit juices.

—ABJ—

In a neighborhood where once our surplus honey nearly all came from the white Dutch or pasture clover, we now rarely get any honey from that plant. This year for the first time we had a heavy flow from yellow sweet clover. Sweet clover has been coming in gradually for a long time but usually it has been the white sweet clover rather than the yellow which has given us our crop.

—ABJ—

From Harry Cross, of El Centro, California, we learn of a shrub common to the desert valleys of California and Arizona and south into Mexico. It is known as bee sage (*Hyptis emoryi*). It must be somewhat tender since he reports that last year's extreme cold killed it to the ground. He mentions also the fact that usually it begins blooming in October and continues all through the winter with full bloom in March and April.

The bee sage grows in a compact clump four to twelve feet high with fragrant herbage. A shrub that blooms all winter even though the bloom be rather sparse should be very valuable to the bees in a mild climate. We would like to know more about the amount of honey which it yields, its color and quality and whether it is the source of surplus. Apparently it does not grow outside the desert regions.

—ABJ—

J. B. Douglas, of Bonita, Arizona, tells of having seen armloads of flowers brought from the fields and laid beside the hives for the bees to gather the honey. He also tells of the owner of thirteen box hives which he declared were full of king bees with a queen as a mate for every king. The writer once heard a hill-billy bee-man declare that he lost his bees because the drones got to fighting and killed off the working force. Strange indeed are the fictions about bees still believed by the uninformed.

FRANK C. PELLETT.